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NEW OR LITTLE-KNOWN CRANE-FLIES FROM THE AMAZONIAN REGION.

BY CHARLES P. ALEXANDER.

The crane-flies that inhabit the vast extent of the Amazonian basin are, unfortunately, still very insufficiently known. The pioneer collecting of Henry W. Bates has been supplemented in recent years principally by the work of Herbert S. Parish, whose two trips, in 1912 and in 1919-1920, have given us almost our sole knowledge of this remarkable fauna. The crane-flies collected on Parish's first trip have been recorded by the writer in other papers (1912-1914) that are cited in the bibliography at the end of the paper. The material secured on the second and more extended excursion has been discussed in part in three short papers by the writer (1920). Most of the new species secured on this trip, especially in the territory of the Upper Amazons, are reserved for consideration in the present paper. In order to complete the report, the comparatively few and scattered records of Amazonian Tipuloidea described in other papers are included herein. The types are in the collection of the writer; and paratypes of many of the species in the collection of the American Entomological Society.

Mr. Parish has kindly supplied the writer with a brief account of his trip which is recorded here to give a clear idea of the itinerary of the 1919-1920 excursion:

"I left New York on the 25th of May, 1919, and after a pleasant voyage of fourteen days arrived off the Brazilian coast. * * * The first place which I was to visit was the city of Pará, situated 175 miles up the Pará River, one of the tributaries of the Amazon. Pará or Belem is one of the finest cities in the tropics. Its parks and buildings are strictly up-to-date and it also boasts of having a completely equipped electric car-line. A branch of this line runs out to Waterworks, the first place where I collected on this trip. Here in the dense woods that surround the waterworks, and for miles around in this district, I collected many different species of insects, including numerous crane-flies. After remaining in this place for ten days, I travelled by railroad eastward to Igarapé-Assú and Pratá, where the collecting proved excellent, but great numbers of the insects collected were destroyed by ants and mold caused by the damp climate. From here I continued up the Amazon, my next stop being Santarem, about 400 miles from the coast. The forest here was scanty and the insects correspondingly scarce,

so I remained for only three days. The next stage of the journey was on a river steamer travelling to Obidos (Obydos, Bates). On board the steamer I was able to collect numbers of insects around the electric lights. The thick forest around Obidos is rich in game and insects are plentiful. It is what might be called a "Naturalist's Paradise." Here the largest of its genus, a tree-top flyer, *Morpho hecuba*, is found. To offset the pleasures of this paradise, mosquitoes are extremely bad both day and night. I left Obidos, travelling by night about 150 miles up the Trombetas River to a village called Oximinia, a small place with about 600 people, situated on the edge of the forest. This place is very secluded and rarely visited by naturalists. After ten days of good collecting I returned to Obidos. From Obidos I continued my way up the Amazon to Parintins and thence to the town of Itacoatiára (Itacoatiára or Serpa, Bates). I remained there for three weeks and then pushed on to Manáos (Barra or Manáos, Bates), a beautiful city situated on a hill. After collecting about the outskirts of this city for a few days, I moved on to a place called Flores, about ten miles out from Manáos on the electric line. Here I was successful in making a large catch of insects, many being new to science.

Teffé (Ega, Bates), about 300 miles up the Solimoes River, another of the main tributaries of the Amazon, was my next objective. The settlement here seemed to be almost the same as when Bates was here over sixty years ago, excepting the fine brick building erected by the Roman Catholics as a residence for their priests. The most striking thing to me was the luxuriance of the vegetation around Teffé Lake and the abundance of Micro-Lepidoptera and Diptera. While at Teffé I managed to ward off a severe attack of malaria which was threatening me. I stayed in this vicinity for two months and then boarded the steamer "Belem," travelling further up the Solimoes to Iquitos, in the Peruvian Department of Loreto. This trip required ten days. While on board the steamer I was able to catch a number of insects attracted to the electric lights at night. Landing at Iquitos, I found it to be a large, up-to-date city, not very far behind our northern cities. The forest about the place proved excellent for collecting. One day while walking in the forest, I noticed a hole in the side of a bank, apparently the entrance of some animal's burrow. By swishing my net about the entrance, I caught four or five crane-flies and later on found the same occurrence, the crane-flies representing one or two species. At this place, crane-flies were noted in numbers swarming in the sunlight. After two weeks' time, I caught a steam launch that plies between this place and Yurimaguas on the Huallaga River, a distance of some 550 to 600 miles. Here I lived with an Indian family who were very hospitable. Looming up in the west I could see the Andes Mountains. I procured a guide through my Indian host and took a walk into the forest. The air here seemed much fresher than that of the low-lying regions of the Amazonian Basin. I remained at Yurimaguas for about a month and then

returned to Iquitos. Here I accepted the invitation to accompany a prospector who was going up the Napo River. We left Iquitos at about three o'clock one afternoon in a small canoe. Our party consisted of five, including the Indian paddlers. The first night, after supper, I got out my collecting apparatus, consisting of a white sheet, lamp, cyanide bottles and net, and after fixing the sheet and lighting the lamp, I was ready for the insects. They started to come in twos and threes, but in about ten minutes they came so fast that I had to call my prospector friend to my assistance. Even then they were in such numbers that we could not get them all. It took me all of the next day to pin and paper this material. Each succeeding night while on the Napo River, I was able to add numerous specimens to my collection. The animal life, especially the birds and fishes, was extremely abundant. I was very sorry when the time came to leave this place and return to Iquitos. From here I caught the river steamer down the Amazon and returned to Canada after an absence of more than a year."

THE FACIES OF THE AMAZONIAN TIPULID FAUNA.

The known Amazonian crane-flies represent a comparatively large number of species distributed in a few relatively large genera. The tribes and subfamilies of the Tipulidae found here are the Limnobiini, Hexatomini, Eriopterini and Tipulinae. The families Tanyderidae, Ptychopteridae and Rhyphidae, and the Pediciini and Cylindrotominae of the Tipulidae, have not been discovered in Amazonian territory. The following genera are comparatively well represented in number of species: *Dicranomyia*, *Geranomyia*, *Rhipidia*, *Gonomyia*, *Erioptera*, *Gnophomyia*, *Trentepohlia*, *Psaronius*, *Polymera*, *Ozodicera* and *Brachypremna*. Other genera that are very characteristic of this general region, although more scantily represented in number of species, are as follows: *Rhamphidia*, *Diotrepha*, *Ceratocheilus*, *Toxorhina* and *Lecteria*. The following genera and subgenera appear to be confined to the Amazonian and Guianian sub-regions: *Molophilus* (*Eumolophilus*), *Ctenolimnophila*, and *Microtipula*. A few genera in the Amazonian region have been taken as yet only on the Upper Amazons in Peruvian territory; these are as follows: *Elephantomyia*, *Cryptolabis* and *Oirimarga*.

Genus **GERANOMYIA** Haliday.

1833. *Geranomyia* Haliday, Ent. Mag., vol. 1, p. 154.

The very large and complex genus *Geranomyia* finds its center of distribution in the Neotropical Region. Many species are widely distributed but others seem to be rather local in their range, this

latter condition possibly being explainable in many instances by our still insufficient knowledge of tropical American Tipulidae.

***Geranomyia recondita* sp. n.**

Rostrum relatively short; head yellowish gray with a narrow silvery gray line extending the length of the vertex, behind the eyes bordered with dusky black; mesonotal praescutum ochreous, heavily striped with reddish brown to plumbeous brown; scutellum pale, pleura suffused with greenish; legs uniformly brown in color; wings yellowish gray with a relatively heavy brown and gray pattern, this including three conspicuous costal areas, the two largest at the origin of *Rs* and the stigma; *Sc* short, extending but a short distance beyond the origin of *Rs*.

Male.—Length (excluding rostrum) 7–7.2 mm.; wing 7–8.7 mm. rostrum about 3.3–3.4 mm.

Female.—Length (excluding rostrum) 7–7.5 mm.; wing 8.2–9.3 mm.; rostrum about 3.2 mm.

Rostrum relatively short, black. Antennae black. Head yellowish gray; a narrow median line of silvery gray extending the length of the vertex; on either side of this line, behind the eyes, a dusky black area. Mesonotal praescutum ochreous, heavily striped with darker; a narrow reddish brown median stripe that becomes obliterated before the suture; lateral stripes darker brown, sometimes plumbeous, behind the pseudosutural foveae broadly expanded laterad, behind crossing the suture onto the scutal lobes; median area of the scutum and the scutellum pale greenish white; postnotum with the median sclerite brownish plumbeous, the lateral sclerites pale. Pleura whitish, slightly pruinose, with very strong light green tints in fresh specimens. Halteres pale brown, the knobs darker. Legs with the coxae greenish testaceous; trochanters testaceous; remainder of the legs brown, the tarsi darker; the femora are unvariegated with other colors; claws small, at the base of each with a comb of four or five teeth that decrease in size toward the base. Wings with a yellowish gray tinge; cells *C* and *Sc* strongly yellowish; wings with a heavy brown and gray pattern, there being three conspicuous brown spots along the costal margin; one at the supernumerary crossvein in cell *Sc*, the second at the origin of *Rs* and tip of *Sc*, the third at the stigma; less distinct, gray, clouds and seams along the cord and outer end of cell *1st M*₂ and at the ends of veins *R*₂₊₃, *1st A* and *2nd A*; veins dark brown, yellow in the pale costal areas. Venation: *Sc* relatively short, *Sc*₁ ending a short distance beyond the origin of *Rs*, this distance about equal to *r*; *Sc*₂ at the tip of *Sc*₁; *Rs* long, gently arcuated; basal deflection of *R*₄₊₅ shorter than the basal deflection of *Cu*₁; cell *1st M*₂ long and narrow, longer than vein *M*₃ beyond it, about equal to vein *M*₁₊₂ beyond it; basal deflection of *Cu*₁ at or beyond the fork of *M*. Abdomen reddish brown, the sternites more greenish.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 6, 1920 (H. S. Parish).

Allotopotype, ♀.

Paratopotype, 2 ♀'s, May 6–25, 1920; paratypes, 8 ♂ ♀, Yurimaguas, April 6–22, 1920 (H. S. Parish).

***Geranomyia xanthoplaca* sp. n.**

Head dusky black; a narrow yellowish gray stripe extending from the front to the occiput; flagellar segments with long verticils; mesonotal praescutum orange-rufus, the lateral margins narrowly greenish; femora pale brown, the tips broadly pale yellow; a broad subterminal dark brown ring; wings faintly yellow; five conspicuous brown spots along the costal region, the third covering the origin of *Rs* and the tip of *Sc*, the latter short, extending but a short distance beyond the origin of *Rs*.

Male.—Length (excluding rostrum) about 4.8 mm.; wing 6 mm.; rostrum alone about 2.8 mm.

Female.—Length (excluding rostrum) about 4.6 mm.; wing 5.5 mm.; rostrum alone about 2.7–2.8 mm.

Rostrum black, comparatively short but slender. Antennae with the scapal segments black, the flagellum paler, dark brown; flagellar segments cylindrical or elongate-oval with long verticils in both sexes. Head with a conspicuous yellowish gray stripe extending from the front to the occiput, subequal in width to the space between the eyes at their narrowest point; remainder of the vertex and occiput dusky black. Mesonotal praescutum intense orange-rufous, without apparent darker stripes, the lateral margin narrowly greenish, the sublateral regions paler than the median stripe; remainder of the mesonotum yellowish testaceous, the posterior half of the postnotum darkened. In the female the scutal lobes are slightly darkened. Pleura yellow with greenish tints. Halteres pale, the knobs greenish brown. Legs with the coxae and trochanters greenish testaceous; femora pale brown, paler basally, the tips broadly (0.65 mm.) pale yellow; a broad subterminal dark brown annulus, this about equal in extent to the pale tip; the femora basad of this brown ring are narrowly and indistinctly yellowish; tibiae and tarsi greenish brown, the tips of the tibiae and distal tarsal segments darker; third and fourth tarsal segments with a series of fine comb-like bristles; claws with the basal shoulder indistinctly toothed. Wings with a faint yellowish tinge, the costal and subcostal cells brighter yellow; five conspicuous brown spots along the costal margin, arranged as follows: at arculus; at the supernumerary cross-vein in cell *Sc*; the third at the origin of *Rs* and tip of *Sc*; the fourth at the stigma, large and elongate; the last mark at the tip of *R*₂₊₃; large gray clouds at the ends of the anal veins; comparatively narrow gray seams along the cord and outer end of cell 1st *M*₂; veins yellow, brown in the infuscated areas. Venation: *Sc* short, *Sc*₁

extending but a short distance beyond the origin of R_s , Sc_2 close to the tip of Sc_1 ; R_s long, slightly angulated at origin; r more than its own length from the tip of R_1 ; cell $1st\ M_2$ long and narrow, longer than any of the veins issuing from it; basal deflection of Cu_1 before to immediately beyond the fork of M . Abdominal tergites light brown, the sternites a little paler.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 6, 1920 (H. S. Parish).

Allotype, ♀, Yurimaguas, April 22, 1920 (H. S. Parish).

Geranomyia bicincta sp. n.

Head dusky black; a narrow silvery gray stripe extending from the front to the occiput; flagellar segments with very long verticils; mesonotal praescutum orange, the lateral margins broadly pale brown, margined internally by a delicate gray line; femora obscure yellow, brightened at the end of the segment, the tip and a narrow subterminal ring dark brown; penultimate tarsal segment with a comb of about eight spines on the distal half; wings faintly yellowish with four small brown spots along the costa, the one at the origin of R_s separated from the one at the tip of Sc , the latter vein long, extending to beyond midlength of R_s .

Male.—Length (excluding rostrum) about 4.5 mm.; wing 5.8 mm., rostrum alone about 2.8 mm.

Female.—Length (excluding rostrum) about 6.8 mm.; wing 6.7 mm.; rostrum alone about 3.8 mm.

Rostrum moderately long and slender, brownish black. Antennae black, the distal flagellar segments a little paler; flagellar segments with unusually long verticils. Head with the vertex between the eyes narrow, silvery gray, this color continued caudad to the occiput; remainder of the vertex dusky black. Mesonotal praescutum orange, the lateral margins broadly pale brown; viewed from above these lateral margins appear much darker brown and there is a narrow silvery gray line between them and the orange disk; remainder of the mesonotum obscure yellowish. Pleura yellowish testaceous, the dorsal sclerites diffusely plumbeous. Halteres pale, the knobs brown. Legs with the coxae and trochanters testaceous; femora obscure yellow, the end of the segment brighter than the base, the extreme apex narrowly dark brown; a short distance from the tip is a narrow dark brown ring, this about equal in extent to the yellow subterminal ring; tibiae and tarsi brown; the penultimate and antepenultimate tarsal segments each bear a comb of spines on the inner face but that on the penultimate segment is here confined to the distal half of the segment and is composed of only about eight spines; terminal tarsal segment comparatively short and without a distinct comb, claws slender, the outermost of the teeth at the base of the claws produced into a long, hairlike point. Wings with a faint yellowish tinge, brighter in the costal and sub-

costal cells; four small brown spots along the costa, the first at the supernumerary crossvein in cell *Sc*; the second at the origin of *Rs*; the third at the tip of *Sc*; the last at the stigma; narrow and indistinct seams along the cord and outer end of cell *1st M*₂; veins yellow, darker in the infuscated areas. Venation: *Sc* long, *Sc*₁ extending to about opposite two-thirds the length of the long *Rs*, *Sc*₂ at the tip of *Sc*₁; *Rs* long, slightly angulated at origin; cell *1st M*₂ moderately long, about equal to vein *M*₁₊₂ beyond it; basal deflection of *Cu*₁ at the fork of *M*, subequal to *Cu*₂. Abdomen light brown; the sternites paler, brownish yellow.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 10, 1920 (H. S. Parish).

Paratopotype, ♂.

***Geranomyia bicincta angusticincta* subsp. n.**

Male.—Length (excluding rostrum) about 5 mm.; wing 6.4 mm.; rostrum alone 3.5 mm.

Female.—Length (excluding rostrum) about 6.4 mm.; wing 6.1–6.3 mm.

In general resembling typical *bicincta*. Size slightly larger. Mesonotal praescutum, viewed from above, with indications of a pale brown median stripe. Femora without the darkened apices; terminal three segments of tarsi with a comb of spinous bristles, those on the penultimate segment including the entire length with the exception of a narrow space at base; ultimate segment with a comb on the distal half.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 10, 1920 (H. S. Parish).

Allotopotype, ♀.

Paratopotypes, 4 ♂ ♀, April 10–16, 1920; paratype, ♀, Iquitos, Peru, May 15, 1920 (H. S. Parish).

***Geranomyia pilipes* Walker.**

1856. *Geranomyia pilipes* Walker, *Insecta Saundersiana*, vol. 1, Dipt., p. 440.

This species was described from the Amazonian Region. Mr. Edwards writes me that the type is not to be found in the British Museum collection. The species is notable by its unusual size (length 10 mm.; wing expanse 20 mm.).

***Geranomyia separata* sp. n.**

Head dark brown, the pale line on the anterior part of the vertex not reaching the occiput; mesonotum reddish yellow, the praescutum with three narrow dark brown stripes; femora brownish yellow, the tips broadly light yellow with a narrow subterminal brown ring; wings grayish subhyaline, spotted with brown, the

spots at the origin of *Rs* and the tip of *Sc* separate, *Sc* rather long, extending to about one-third the length of *Rs*.

Male.—Length (excluding rostrum) about 6.4 mm.; wing 6.4 mm.

Female.—Length (excluding rostrum) 7.6 mm.; wing 8 mm.; rostrum alone 2.6 mm.

Rostrum black, in the male type broken, in the females relatively short. Antennae brownish black. Head dark brown, the vertex between the eyes more grayish, this color extending backward but not attaining the occiput. Mesonotal praescutum reddish yellow with three distinct narrow dark brown stripes; lateral margins of the praescutum infuscated; scutal lobes with the proximal margins dark brown, the median area and the scutellum whitish; postnotum dark brown, somewhat plumbeous. Pleura obscure yellow; the dorso-pleural region darker. Halteres pale brown, the knobs dark brown. Legs with the coxae and trochanters light yellow; femora pale brown, yellowish basally, darkening to beyond midlength, thence suddenly light yellow, at about midlength of this yellow tip with a narrow brownish black annulus; tibiae light brown, the tips blackened; tarsi light brown, passing into black at the tips. Wings grayish subhyaline, cells *C* and *Sc* more yellowish; a rather heavy brown pattern arranged as follows: Base of cell *Sc*; a broad seam on the supernumerary crossvein in cell *Sc*; a seam at the origin of *Rs*, continued some distance down the vein; an entirely separate seam at the tip of *Sc*; stigma large, subtriangular; cord and outer end of cell *1st M*₂ seamed with brown; a cloud along vein *2nd A* near its outer end. Venation: *Sc* rather long, *Sc*₁ extending some distance beyond the origin of *Rs*, about opposite one-third the length of *Rs*; *Rs* long, slightly angulated near origin; *r-m* short; cell *1st M*₂ a little shorter than *M*₁₊₂ beyond it; basal deflection of *Cu*₁ just before the fork of *M*. Abdomen dark brown, the sternites paler.

Habitat.—Brazil, Peru.

Holotype, ♂, Yurimaguas, April 16, 1920 (H. S. Parish).

Allotopotype, ♀, April 12, 1920.

Paratype, ♀, Teffé, Brazil, January 9, 1920 (H. S. Parish).

The paratype from Teffé is larger and brighter colored than the allotype but undoubtedly pertains to this species. *Geranomyia separata* resembles *G. insignis* Loew and related species, but is readily told by the longer subcosta with the dark marking at the origin of *Rs* separate from that at the end of *Sc*.

***Geranomyia cinereinota* Alexander.**

1913. *Geranomyia cinereinota* Alexander, Ent. News, vol. 24, p. 407.

Teffé, Brazil, December 7, 1919, to February 4, 1920 (H. S. Parish).

Yurimaguas, Peru, April 5, 1920 (H. S. Parish).

Napo River, Peru, June 6-16, 1920 (H. S. Parish).

Genus **DICRANOMYIA** Stephens.

1829. *Dicranomyia* Stephens, Cat. Brit. Ins., vol. 2, p. 243.

In the territory of the Brazilian Amazons, species of the genus *Dicranomyia* appear to be very uncommon both as regards species and individuals. In Peruvian territory, however, they become more numerous.

Dicranomyia capnora sp. n.

Antennae dark brown, the first scapal segment white; front and anterior part of the vertex silvery-white pubescent; vertex with a conspicuous conical tubercle; mesonotum yellowish orange, the lateral margins darkening into clove-brown; legs pale testaceous yellow, the tarsi and tips of the tibiae white; wings deep smoky, the costal and apical regions more intense; a narrow dark pattern along the cord, outer end of cell 1st M_2 and origin of Rs ; Sc long.

Male.—Length 5.5-6.5 mm.; wing 7.7-8.3 mm.

Female.—Length 6.6 mm.; wing 7.8 mm.

Rostrum and palpi brownish black. Antennae with the first segment of the scape silvery-white; remainder of the antennae dark brown; the flagellar segments in the male are long-cylindrical, each with a short basal pedicel that is paler than the rest of the segment. Head moderately broad; front and anterior part of the vertex pure silvery-white; remainder of the head dark brown; vertex produced into a conspicuous conical elevation that is directed dorsad and slightly caudad. Mesonotal praescutum with the broad median area conspicuous yellowish orange, gradually darkening into clove-brown on the lateral margins of the sclerite; median area of the scutum and the scutellum yellowish orange, the lateral areas darker; postnotum pale brown. Pleura testaceous yellow. Halteres dark brown. Legs with the coxae and trochanters light yellow; femora and tibiae pale testaceous yellow, the apex of the tibiae and the tarsi excepting the terminal segment white; last tarsal segment and the claws blackish. Wings with a strong smoky tinge, more intense along the costal and apical regions; the basal, posterior and anal cells sometimes with paler centers; a sparse darker brown pattern, these spots arranged as follows: at origin of Rs ; tip of Sc ; r ; along the cord and outer end of cell 1st M_2 ; veins dark brown. Venation: Sc long, extending to beyond midlength of the long Rs , Sc_2 at the tip of Sc_1 ; Rs strongly angulated to slightly spurred at origin; deflection of R_{4+5} about equal to the basal deflection of Cu_1 ; cell 1st M_2 closed, comparatively short; basal deflection of Cu_1 close to the fork of M but slightly variable in position, longer than Cu_2 . Abdominal tergites dark brown, the sternites and hypopygium more yellowish brown. Male hypopygium with the dorsal pleural

appendage a rather stout, almost straight, flattened hook with the tip slightly curved; ventral pleural appendage an oval flattened lobe, the inner face produced proximad into a flattened glabrous lobe, the tip with a few delicate setae. Gonapophyses appearing as broad flattened plates with the outer proximal angle narrowed into a point. Ovipositor with the valves very short, the tergal valves slender, acicular, strongly curved; sternal valves compressed, the tips subacute.

Habitat.—Peru.

Holotype, ♂, Napo River, June 12, 1920 (H. S. Parish).

Allotopotype, ♀, June 16, 1920.

Paratopotypes, 6 ♂'s, June 12–14, 1920; paratype, ♀, Yurimaguas, March 31, 1920 (H. S. Parish).

Dicranomyia capnora is a striking species that finds its closest relative in *D. lutzii* Alexander (British Guiana) from which it differs in the details of coloration of the body, wings and legs.

***Dicranomyia optabilis* sp. n.**

Antennae dark brown; head yellowish gray; mesonotal praescutum reddish with a broad black median stripe; postnotum, scutellum and lobes of the scutum dark brown; pleura yellow and dark brown; halteres yellow; fore coxae dark brown; hind coxae yellow; femora brownish yellow with a very broad black subterminal ring; wings yellowish, the basal quarter and a conspicuous seam along the cord brownish; vein *Sc* long; abdominal segments dark brown, the distal half of each segment yellowish.

Female.—Length 6.6 mm.; wing 7.5 mm.

Rostrum and palpi dark brown. Antennae dark brown, the flagellar segments cylindrical, each with a short pedicel. Head dark, yellowish gray pruinose. Mesonotal praescutum shiny reddish castaneous with a broad black median stripe; lateral stripes short, confluent with the posterior ends of the median stripe; a large circular brown spot on the posterior margin of the sclerite; scutal lobes shiny brownish black, the median area paler; postnotum and the median area of the scutellum black, the lateral portions pale. Pleura with the propleura, mesosternum, mesepisternum and the lateral sclerites of the postnotum shiny dark brown; remainder of the pleura yellowish. Halteres yellow, the outer portion of the stem a little darkened. Legs with the fore coxae dark brown; middle coxae slightly infuscated; hind coxae yellowish; trochanters obscure yellow; femora brownish yellow, before the tips passing into a broad black subterminal ring, the extreme apices very narrowly obscure yellow; remainder of the legs black, the bases of the tibiae a little paler. Wings with a yellowish tinge, variegated with brown; stigma oval, dark brown; a broad basal crossband, slightly paler brown than the stigma, occupies more than the basal quarter of the wing; a broad brown seam along the

cord, tip of *Sc* and origin of *Rs*, broader and more diffuse posteriorly; wing-tip and a faint seam along the outer end of cell 1st *M*₂ faintly darkened; veins yellow, brown on the infuscated areas. Venation: *Sc* long, *Sc*₁ extending to about opposite two-thirds the length of *Rs*, *Sc*₂ at the tip of *Sc*₁; *Rs* rather short, angulated and slightly spurred at origin, inner end of cell 1st *M*₂ and *m* slightly arcuated; basal deflection of *Cu*₁ just beyond the fork of *M*. Abdominal segments with the basal half of each dark brown, the apical half yellowish. Ovipositor with the tergal valves slender, strongly up-curved, the tips acute; sternal valves long, terete, tapering gradually to the subacute apices.

Habitat.—Peru.

Holotype, ♀, Napo River, June 15, 1920 (H. S. Parish).

Dicranomyia eiseni (Alexander)

1912. *Furcomyia eiseni* Alexander, Can. Ent., vol. 44, pp. 338, 339.

Igarapé Assú, Brazil, July 14, 1919 (H. S. Parish).

Manáos, Brazil, November 4, 1919 (H. S. Parish).

Dicranomyia amazonica Alexander.

1920. *Dicranomyia amazonica* Alexander, Journ. N. Y. Ent. Soc., vol. 28, pp. 2, 3.

Igarapé Assú, Brazil, July 16, 1919 (H. S. Parish); Type.

Obidos, Brazil, September 10, 1919 (H. S. Parish).

Dicranomyia egae sp. n. Plate IV, fig. 10.

Antennae brownish black, flagellar segments cylindrical, short-petiolate; mesonotal praescutum brownish yellow with a very broad shiny black stripe; legs dark brown, the bases of the femora yellowish; wings brownish gray; *Sc* long; abdomen dark brown; male hypopygium highly complicated in structure.

Male.—Length 6.4 mm.; wing 6 mm.

Female.—Length 6.8 mm.; wing 6.4 mm.

Rostrum and palpi brownish black. Antennae brownish black throughout; flagellar segments oval to cylindrical, each with a short basal petiole. Head dark brown. Pronotum yellowish, black medially. Mesonotal praescutum brownish yellow with a single, very broad shiny black stripe that widens out strongly behind, suffusing the scutal lobes; extreme lateral margin of the praescutum with a brownish spot; median area of the scutum yellowish; scutellum dark brown, narrowly margined caudally with pale; postnotum dark brown. Pleura obscure yellow, the mesepisternum largely dark brown. Mesosternum brownish. Halteres yellow, the knobs dark brown. Legs with the coxae and trochanters light yellow; remainder of the legs dark brown, the femoral bases yellowish, narrowest on the fore legs, broadest on the posterior legs; claws slender with no teeth except at the base. Wings brownish gray, the costal region and the apex indistinctly darkened; stigma slightly darker brown,

ill-defined; veins brown. Venation: *Sc* long, ending just before the fork of the long sector, *Sc*₂ at the tip of *Sc*₁; *Rs* long, almost straight; *r* at the tip of *R*₁; basal deflection of *R*₄₊₅ about twice *r-m*; cell 1st *M*₂ pentagonally rectangular, a little longer than vein *Cu*₁ beyond it; basal deflection of *Cu*₁ just before the fork of *M*, longer than *Cu*₂ alone. Abdomen dark brown, the ninth segment paler; hypopygium with the pleurites dark reddish brown, the appendages blackened. Male hypopygium (Plate IV, fig. 10) large and highly complicated in structure; pleurites cylindrical with two pleural appendages; the outer of these is a small, brown, clavate lobe that is provided with a few long bristles; the inner or apical pleural appendage is large, roughly triangular, the cephalic angle produced into a conspicuous claw-like hook; along the caudal margin there is a comb of about 30 slender teeth; proximal face of this lobe produced into a short, blunt, blackened lobe. On the proximal face of the pleurite near the base is a short cylindrical lobe capped by a brush of very long yellowish bristles, the inner (cephalic) ones shortest, the outer ones very long and conspicuous; basad of the pleurite is a larger but somewhat similar lobe, the apical tuft of hairs very dense but short, not exceeding the lobe in length.

Habitat.—Brazil.

Holotype, ♂, Teffé, December 20, 1919 (H. S. Parish).

Allotopotype, ♀.

Paratopotypes, 2 ♂'s.

Dicranomyia napoensis sp. n. Plate IV, fig. 11.

Male.—Length about 5 mm.; wing 5 mm.

Generally similar to *D. egae* sp. n., differing as follows: Size smaller. Praescutal stripes confluent as in *egae*. Wings a little broader, more grayish than brown, with the stigma more clearly defined, oval, brown; *Sc* shorter, cell 1st *M*₂ longer and narrower. Male hypopygium (Plate IV, fig. 11) with the setigerous lobes on the proximal face of the pleurites different in form; the basal lobe is elongate-cylindrical, darkened, bearing a rather short tuft of bristles at the apex; immediately caudad of this is a smaller lobe, paler, with the bristles of proportionately equal length. Near mid-length of the proximal face of the pleurite is a small cylindrical lobe bearing two very powerful flattened bristles or fascicles of bristles; at the base of this lobe is a larger one with a powerful bristle at its tip, the apex with abundant smaller bristles. The pleural appendage has the comb-like teeth very irregular in size and distribution, not evenly spaced as in *egae*. Gonapophyses flattened, the apices appearing as slender, erect, slightly curved pale blades.

Habitat.—Peru.

Holotype, ♂, Napo River, June 15, 1920 (H. S. Parish).

Dicranomyia rapax sp. n. Plate IV, fig. 12.

Head dark grayish pruinose; mesonotum reddish yellow, unmarked with darker; wings with *Sc* long; male hypopygium with

the pleural appendage powerful, shaped somewhat like the head and neck of a bird of prey.

Male.—Length about 5 mm., wing 6 mm.

Rostrum and palpi dark brown. Antennal scape dark brownish black, flagellum broken. Head dark, gray pruinose. Mesonotum light reddish yellow, the praescutum and scutum unmarked with darker as in the three other species of this group described at this time. Pleura yellowish testaceous, the dorsal sclerites a little darker. Halteres brown. Legs with the coxae and trochanters pale testaceous, remainder of the legs brown, the femora paler basally. Wings with a brownish tinge; stigma oval, darker brown; veins dark brown. Venation: *Sc* long, *Sc*₁ ending far beyond midlength of *Rs*, *Sc*₂ near the tip of *Sc*₁; basal deflection of *Cu*₁ some distance before the fork of *M*, this distance slightly variable. Abdomen dark brown, the sternites paler. Male hypopygium (Plate IV, fig. 12) very distinct from the other species of the group; pleurites very short and stout, on the proximal face near the base with a very stout lobe that is slightly enlarged and bifid at its outer end and here provided with several powerful bristles. Pleural appendage very large and powerful, shaped somewhat like the head of a bird of prey, the short curved apex being the beak, the neck region provided with dense acute spines. Gonapophyses appearing as flattened blades, the lateral angles produced laterad into a conspicuous cylindrical lobe, the apex blackened.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 6, 1920 (H. S. Parish).

Paratopotype, ♂, March 31, 1920.

***Dicranomyia acuminata* sp. n.** Plate IV, fig. 9.

Antennae black, the flagellar segments provided with an apical pedicel; head dark, yellowish gray pruinose; mesonotal praescutum reddish yellow with three dark brown stripes that are not confluent; wings with *Sc* long; male hypopygium with the pleural appendage produced proximad into a long, tapering point.

Male.—Length 5 mm.; wing 6.1 mm.

Female.—Length 6.2 mm.; wing 6 mm.

Rostrum and palpi dark brown. Antennae rather long for a member of this genus, black; each flagellar segment with a moderately long apical pedicel; flagellar segments covered with a conspicuous white pubescence, the pedicels glabrous. In the female, the antennae are shorter, the flagellar segments without the apical pedicels. Head dark, yellowish gray pruinose. Pronotum reddish yellow, dark brown medially. Mesonotal praescutum reddish yellow with three conspicuous dark brown stripes, the median one becoming obliterated far before the suture; scutum obscure reddish, the lobes dark brown; remainder of the mesonotum dark brown. Pleura obscure reddish brown, sometimes a little darker. Halteres dark

brown. Legs with the coxae and trochanters yellowish testaceous; remainder of the legs brownish black, the femoral bases paler. Wings with a distinct brownish tinge; stigma small, subcircular, slightly darker brown; veins dark brown. Venation: *Sc* long, *Sc*₁ extending to some distance beyond midlength of *Rs*, *Sc*₂ close to the tip of *Sc*₁; *Rs* rather long, gently arcuated; *r* at the tip of *R*₁; basal deflection of *R*₄₊₅ about equal to or longer than the basal deflection of *Cu*₁; cell 1st *M*₂ closed, shorter than the veins beyond it; basal deflection of *Cu*₁ just beyond the fork of *M*. In the allotype, cell 1st *M*₂ is a little longer; basal deflection of *Cu*₁ just before the fork of *M*. Abdominal tergites dark brown; sternites pale obscure yellow; hypopygium yellowish. Male hypopygium (Plate IV, fig. 9) with the pleurites rather stout, provided with rather sparse long bristles; near the inner distal angle with about four shorter but powerful bristles in alignment; pleural appendage with the proximal end drawn out into a long acuminate point that is strongly curved near the outer end; this point is provided with a few delicate setae; closely applied to this pleural appendage but possibly representing a second appendage is a small blackened beak with four or five points, the whole suggesting a cock's-comb. Gonapophyses appearing as flattened blades, the tips slightly blackened and curved laterad.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 10, 1920 (H. S. Parish).

Allotype, ♀, Iquitos, May 12, 1920 (H. S. Parish).

Paratopotype, ♂, April 16, 1920; paratype, ♂, Iquitos, May 19, 1920.

Dicranomyia fumosa (Alexander)

1912. ? *Furcomyia fumosa* Alexander, Can. Ent., vol. 44, p. 364.

Napo River, Peru, June 12, 1920 (H. S. Parish).

Genus **RHIPIDIA** Meigen.

1818. *Rhipidia* Meigen, Syst. Besch., vol. 1, p. 153.

Four species of this genus have been taken within the Amazonian Region but there are doubtless many others yet to be discovered.

Rhipidia (Rhipidia) perarmata sp. n.

Antennae of the male long, bipectinate, bicolorous; head dark; mesonotal praescutum reddish brown with a darker median stripe; pleura dark brown; femora brown with a narrow darker subterminal ring; wings brownish gray, sparsely variegated with darker brown and subhyaline; *Sc* long; abdomen annulated reddish brown and dark brown; male hypopygium complicated in structure.

Male.—Length about 5.6 mm.; wing 6.5 mm.

Rostrum and palpi dark brown. Antennae of the male elongate, bipectinate; flagellum badly injured by insect pests; pectinations

very long and slender, much longer than the segments that bear them; between the bases of the pectinations a small hairy tubercle; the first flagellar segment apparently bears pectinations but this is uncertain, as this part of the organ is badly injured by pests; scapal segments dark brown, flagellar segments with the basal swelling and pectinations dark brown, the elongate terminal pedicel of each segment conspicuously ivory-white to produce a bicolourous appearance. Head dark grayish brown, the eyes practically contiguous on the vertex. Mesonotal praescutum dull reddish brown with a broad darker brown median stripe and very indistinct and abbreviated lateral stripes; remainder of the mesonotum dark brownish testaceous. Pleura dark brown, sparsely pruinose; sternites beneath obscure yellow. Halteres light yellow, the knobs broken. Legs with the coxae dark brown on the basal half of the outer face, the apical half suddenly pale yellow; trochanters yellow; femora brown, paler basally, the tips broadly and indistinctly paler and including a narrow brown subterminal ring; tibiae and tarsi dark brown. Wings with a strong brownish gray tinge, sparsely variegated with dark brown and subhyaline; cell *Sc* yellowish; the dark brown areas appear as clouds at the origin of *Rs*, tip of *Sc*, along the cord, outer end of cell 1st *M*₂ and at the stigma; wing-apex darkened; the subhyaline areas occupy the radial cells before the origin of *Rs*, most of cell 1st *R*₁, cell 2nd *R*₁ beyond the stigma; in cell *R*₃ one before and one beyond the level of *r*; veins dark brown. Venation: *Sc* long, *Sc*₁ extending to about opposite two-thirds the long *Rs*, *Sc*₂ near the extreme tip of *Sc*₁; *Rs* long, strongly arcuated at origin; *r* at the tip of *R*₁; *r-m* about one-half the basal deflection of *M*₁₊₂; cell 1st *M*₂ long and narrow, rectangular, about equal to vein *M*₃ beyond it; basal deflection of *Cu*₁ just beyond the fork of *M*. Abdomen reddish brown, the apical two-fifths of each segment dark brown. Male hypopygium very large and complicated in structure; pleurites small, about as large as the ventral pleural appendages, the proximal face produced inward into a cylindrical dark brown arm that is fringed with bristles along the cephalic face; the caudal face bears near midlength a tubercle tipped with two long bristles. Ventral pleural appendage fleshy, the proximal face produced inward as a yellow, slightly curved arm that bears two slender spines beyond midlength on the caudal face, these spines with the tips squarely truncated. Dorsal pleural appendage a long, cylindrical, slightly curved arm with the tip suddenly narrowed and acute. Gonapophyses flattened pale blades, the proximal angles produced caudad into narrow knife-like blades that are blackened at their tips. What appears to be the anal tube is very large, blackened, narrow basally, expanded into a conical structure apically, the margin crenulated.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 1, 1920 (H. S. Parish).

Rhipidia perarmata is related to *R. calverti* Alexander (Costa Rica) and *R. bipectinata* Williston (Lesser Antilles) but differs strik-

ingly in the coloration and very peculiar structure of the male hypopygium.

Rhipidia (Conorhipidia) punctipennis Alexander.

1914. *Rhipidia (Conorhipidia) punctipennis* Alexander, Journ. N. Y. Ent. Soc., vol. 22, pp. 117, 118.

A large female which may represent a new race of this species was taken at Iquitos, Peru, May 15, 1920 (H. S. Parish). The typical form has not been found outside of Costa Rica.

Rhipidia (Arhipidia) annulicornis Enderlein.

1912. *Rhipidia annulicornis* Enderlein, Zool. Jahrb. Syst., vol. 32, pp. 80, 81.

Sex? Napo River, Peru, June 8, 1920 (H. S. Parish).

Rhipidia (Arhipidia) domestica amazonensis Alexander.

1912. *Rhipidia domestica amazonensis* Alexander, Bull. Brooklyn Ent. Soc., vol. 8, p. 17.

Teffé, Brazil, December 25, 1919 (H. S. Parish).

Napo River, Peru, June 9–15, 1920 (H. S. Parish).

Rhipidia (Arhipidia) domestica angustifrons Alexander.

1912. *Rhipidia domestica angustifrons* Alexander, Bull. Brooklyn Ent. Soc., vol. 8, pp. 16, 17.

Napo River, Peru, June 9–12, 1920 (H. S. Parish).

The pectinations on the male antennae are distinctly longer than in typical *domestica*.

Genus **RHAMPHIDIA** Meigen.

1830. *Rhamphidia* Meigen, Syst. Besch., vol. 6, p. 281.

Rhamphidia miranda sp. n.

General coloration reddish yellow; wings grayish subhyaline with a conspicuous brown band along the cord; cell R_1 long and narrow; cell 1st M_2 rectangular, the basal deflection of Cu_1 beyond the fork of M ; male hypopygium with the shortest pleural appendage produced into a simple curved hook.

Male.—Length about 5.5 mm.; wing 5.2–5.6 mm.

Female.—Length 6.7 mm.; wing 5.4 mm.

Rostrum about as long as the remainder of the head, pale brownish yellow; palpi short, dark brown. Antennae short, light brown; flagellar segments elongate-cylindrical with very long verticils. Head light gray. Mesonotum reddish yellow without markings. Pleura slightly darker. Halteres pale, the knobs brown. Legs with the coxae and trochanters reddish yellow; remainder of the legs pale testaceous, the terminal tarsal segments slightly darker. Wings grayish subhyaline, cells C and Sc more yellowish; stigma oval, brown, occupying the middle portion of cell R_1 and the distal end of cell Sc_1 ; from the stigma a broad but ill-defined band con-

tinues across the wing following the cord to the fork of *Cu*; wing-base and wing-tip very slightly darker than the ground-color; veins pale brown, more yellowish in the costal region, darker in the infuscated areas. Venation: *Sc*₁ ending a short distance beyond the fork of *Rs*, *Sc*₂ at the tip of *Sc*₁; *Rs* straight, in alignment with the basal deflection of *R*₄₊₅; cell *R*₁ very long, the sides parallel; *r-m* distinct, about one-half of *m*; cell 1st *M*₂ rectangular, a little longer than vein *Cu*₁ beyond it; basal deflection of *Cu*₁ about one-half to its full length beyond the fork of *M*. Abdomen reddish brown, with a black subterminal ring on segments seven and eight. Male hypopygium with the shortest pleural appendage with the tip blackened, produced into a simple curved hook; in *R. mirabilis* the extreme tip is bifid.

Habitat.—Brazil, Peru.

Holotype, ♂, Teffé, Brazil, February 3, 1920 (H. S. Parish).

Allotype, ♀, Yurimaguas, Peru, April 6, 1920 (H. S. Parish); condition fragmentary.

Paratopotypes, 2 ♂'s, mounted in balsam; paratypes, 2 ♀'s, with the allotype, April 5 and 6, 1920; badly injured by insect pests; ♂, with the allotype, April 23, 1920.

Rhamphidia miranda bears a strong superficial resemblance to *R. mirabilis* Alexander but differs in the coloration and venation of the wings and in the details of structure of the male hypopygium.

***Rhamphidia mirabilis* Alexander.**

1914. *Rhamphidia mirabilis* Alexander, Trans. Am. Ent. Soc., vol. 40, pp. 230, 231.

Pratá, Brazil, July 5, 1919 (H. S. Parish).

Igarapé Assú, Brazil, July 15, 1919 (H. S. Parish).

Yurimaguas, Peru, April 6, 15, 17, 1920 (H. S. Parish).

Napo River, Peru, June 16, 1920 (H. S. Parish).

***Rhamphidia sanguinolenta* sp. n.**

General coloration light reddish yellow; head gray; mesonotal postnotum and a dorsal longitudinal pleural stripe dark brown; legs yellow, the femora narrowly tipped with dark brown; wings pale yellow; stigma oval, dark brown; two pale brown crossbands; wing-tip indistinctly darkened; basal section of *M*₁₊₂ long, oblique, the inner end of cell 1st *M*₂ being strongly arcuated; abdominal tergites annulated dark brown and obscure yellow.

Male.—Length 4.8 mm.; wing 4.5 mm.

Female.—Length 5 mm.; wing 4.6 mm.

Rostrum about as long as the head, light yellow; palpi pale brown. Antennae short; scapal segments yellow; flagellum pale brown. Head gray. Mesonotal praescutum light reddish yellow, the post-

notum dark brown. Pleura pale testaceous yellow, the dorsal pleurites with a brown longitudinal stripe, extended caudad to the postnotal region. Halteres light yellow. Legs with the coxae and trochanters pale yellow, the margins of the latter narrowly dark brown; femora yellow, the tips narrowly but distinctly dark brown; tibiae and tarsi pale yellow. Wings with a pale yellowish tinge; stigma oval, dark brown, conspicuous; much paler brown crossbands arranged as follows: Just beyond the base of the wing, beginning in cell *M*, continued to the anal margin at the end of vein *2nd A*; an ill-defined band along the cord; outer end of cell *1st M*₂ seamed with darker; wing-apex in cells *R*₃, *R*₅ and *2nd M*₂ indistinctly darkened; veins yellow, more brownish in the infuscated areas. Venation: *Sc*₁ ending at about opposite four-fifths *R*₅, *Sc*₂ a short distance from its tip; *R*₅ short, gently sinuous to almost straight; *R*₂₊₃ relatively short, about equal to or approximately a fifth longer than *R*₅, gently bisinuous; *r-m* a little longer than the deflection of *R*₄₊₅; cell *1st M*₂ large, the proximal margin arcuated, oblique; basal section of *M*₁₊₂ longer than the second section, *r-m* being near mid-length of the cell *1st M*₂; *m* a little shorter than the outer deflection of *M*₃; basal deflection of *Cu*₁ at or close to the fork of *M*. Basal abdominal tergites annulated dark brown and obscure brownish yellow, the basal two-fifths of each segment being dark brown, the apical three-fifths brownish yellow; sternites yellow.

Habitat.—Peru.

Holotype, ♂, Iquitos, March 2, 1920 (H. S. Parish).

Allotopotype, ♀, March 5, 1920.

Paratopotypes, 2 ♂'s, March 4, 1920.

***Rhamphidia uniformis* Alexander.**

1914. *Rhamphidia uniformis* Alexander, Trans. Am. Ent. Soc., vol. 40, p. 230.

Pratá, Brazil, June 30, 1919 (H. S. Parish).

Teffé, Brazil, January 28, 1920 (H. S. Parish).

Napo River, Peru, June 4–15, 1920 (H. S. Parish).

***Rhamphidia albitarsis* Osten Sacken.**

1887. *Rhamphidia albitarsis* Osten Sacken, Berl. Ent. Zeitsch., vol. 31, p. 184.

Yurimaguas, Peru, March 31–April 22, 1920 (H. S. Parish).

A variety of *R. albitarsis* with the white of the fore and middle tarsi very narrowly restricted was taken at Iquitos, Peru, May 6, 1920 (H. S. Parish).

Genus **ORIMARGA** Osten Sacken.

1859. *Orimarga* Osten Sacken, Mon. Dipt. N. Amer., part 4, p. 120.

***Orimarga pallidibasis* sp. n.**

General coloration brown, grayish pruinose; pleura with a dark brown longitudinal stripe; legs with the tibiae and tarsi white, the

femora and tibiae broadly tipped with black; wings faintly grayish, the costal region slightly infuscated; wing-base conspicuously pale; distal section of R_1 longer than R_s .

Male.—Length about 5.5 mm.; wing 5.7 mm.

Female.—Length about 7 mm.; wing 6.4 mm.

Rostrum and palpi dark brown. Antennal scape dark brown, the flagellum broken. Head gray, clearer and lighter gray adjoining the inner margins of the eyes. Mesonotum gray pruinose, the median area broadly brownish, the extreme lateral margins narrowly whitish; remainder of the mesonotum brown, sparsely dusted with grey. Pleura brown, darker dorsally; sternum dark brown, paler medially beneath. Halteres pale. Legs with the coxae brownish testaceous; trochanters similar, the margin with a black spot; anterior femora whitish, the tips broadly and conspicuously blackened and with an indistinct whitish subterminal ring; posterior femora brown, gradually darkening to the black tips; tibiae white, the tips broadly and abruptly black; tarsi white. Wings with a faint greyish tinge, more brownish in the costal region; wing-base before the arculus conspicuously whitish; veins pale brown. Venation: Sc moderately long, Sc_1 ending opposite about three-fourths the length of R_s , Sc_2 rather indistinct, at the tip of Sc_1 ; R_s long, strongly arcuated at origin; r about mid-distance between Sc_2 and the tip of R_1 , the distal section of R_1 being a little longer than R_s ; $r-m$ shorter than the basal deflection of M_{1+2} ; petiole of cell M_3 longer than vein M_3 ; basal deflection of Cu_1 about its own length before the fork of M . Abdominal tergites dark brown, the sternites a little paler.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 8, 1920 (H. S. Parish).

Allotopotype, ♀, April 1, 1920.

Paratopotype, Sex ?, April 5, 1920.

Orimarga pallidibasis is readily told from the other known species of the genus by the position of the radial crossvein, vein R_1 beyond it being a little longer than the sector; in most species of the genus, r lies close to the tip of R_1 .

Genus **DIOTREPHA** Osten Sacken.

1878. *Diotrepha* Osten Sacken, Cat. N. Amer. Dipt., p. 219.

1888. *Thambeta* Williston, Synopsis N. Am. Dipt., p. 32.

Diotrepha atribasis Alexander.

1914. *Diotrepha atribasis* Alexander, Trans. Am. Ent. Soc., vol. 40, p. 240.

Flores, Brazil, November 18, 1919 (H. S. Parish).

Teffé, Brazil, December 22–24, 1919 (H. S. Parish).

Iquitos, Peru, June 7, 1920 (H. S. Parish).

***Diotrepha fumicosta* sp. n.**

General coloration dark brown, legs pale yellow, wings brown, the costal margin broadly seamed with darker brown, basal deflection of Cu_1 about one-half the length of the sector before the origin of the latter.

Female.—Length 6.5 mm., wing 5 mm.

Rostrum and palpi dark brown. Antennae pale brown. Head brown. Mesonotum and pleura dark brown. Mesosternum slightly paler than the pleura. Halteres dark brown, the base of the stem paler. Legs with the coxae dark brown, trochanters obscure yellow; remainder of the legs pale yellow, only the terminal tarsal segments a little darkened. Wings with a strong brownish tinge, the costal region, continued to the wing-apex, broadly darker brown, this color paler on the basal third of the wing; a brownish cloud in the base of cell *1st A*; veins brown. Venation: Sc moderately long, Sc_1 ending opposite midlength of R_s , Sc_2 near the tip of Sc_1 ; R_s long, gently arcuated; r on R_2+3 and on R_1 , the distal section of R_1 being a little longer than the strongly arcuated basal deflection of R_4+5 ; basal deflection of Cu_1 before the level of the origin of R_s , the distance about one-half of R_s . In the paratype, R_s is considerably longer than R_2+3 . Abdomen dark brown, the stout valves of the ovipositor horn-colored. Tergal valves of the ovipositor much smaller and shorter than the powerful, blade-like sternal valves.

Habitat.—Brazil, Venezuela.

Holotype, ♀, Prata, Pará, Brazil, June 30, 1920 (H. S. Parish).

Paratopotypes, 2 ♀'s, one in the collection of the British Museum of Natural History.

Paratype, ♀, Boqueron, Yaracuy, Venezuela, March 17, 1920 (J. H. and E. B. Williamson and W. H. Ditzler).

The only described species with which the present form agrees at all is *D. concinna* Williston. Mr. F. W. Edwards, of the British Museum, has compared a paratype of the present species with Williston's types of *D. concinna* and reports the differences as follows:

"*D. concinna*: Thorax light brown. Wings clear (legs missing). Palpi longer. Wings narrower, especially cell Sc . Crossvein sc (Sc_2) beyond the tip of Sc , in one specimen another crossvein in cell Sc beyond the first. R_s half as long again as R_2+3 , hence all apical cells very short. Cu_1 a (basal deflection of Cu_1) nearer base of wing, at a distance about equal to R_2+3 before base of R_s .

"*D. fumicosta*: Thorax darker brown. Wings with broad brown margin on apical part of costa. Palpi shorter. Wings rather broader. Crossvein sc just before tip of Sc . R_s a little shorter than R_2+3 , apical cells longer than in above. Distance of Cu_1 a from base of R_s equal to less than half of R_2+3 ."—F. W. EDWARDS.

Although the remaining specimens of the type-series of *D. fumicosta* do not agree in all particulars with the specimen described by Mr. Edwards, yet they are in so close agreement that practically all of the distinctions indicated hold throughout the series.

Genus **ATARBA** Osten Sacken.

1869. *Atarba* Osten Sacken, Mon. Dipt. N. Amer., part 4, pp. 127, 128.

Atarba is a rather small genus of crane-flies that reaches its greatest specific development in the tropics of the New World. The genus has been referred to the old tribe Antochini but the presence of tibial spurs in the typical forms would indicate that the present reference is more nearly correct despite the reduced venation.

***Atarba megaphallus* sp. n.**

Antennae of the male elongate; flagellum dark brown, both ends of each segment narrowly pale; wings grayish yellow; *Rs* short, cell 1st *M*₂ small; male hypopygium with the penis-guard greatly enlarged, the apex widened into a hood-shaped structure.

Male.—Length 5–5.5 mm.; wing 5–5.8 mm.

Female.—Length 6.5 mm.; wing 6.2 mm.

Rostrum brownish yellow. Antennae of the male elongated, longer than one-half the body; scapal segments brownish yellow; first flagellar segment pale brown, passing into dark brown before the tip, the extreme apex pale; remaining flagellar segments dark brown, the extreme base and apex of each segment pale to produce a narrowly annulated appearance; flagellar segments elongate-cylindrical, clothed with an abundant erect white pubescence and provided with a few verticils arranged unilaterally. Head pale brownish yellow. Mesonotum pale brownish yellow, the praescutum without markings. Pleura brown, fading into yellow on the sternum. Halteres pale brown, the knobs dark brown. Legs with the coxae and trochanters obscure yellow; femora obscure yellowish, the extreme tips indistinctly darker; remainder of the legs brownish yellow, only the terminal tarsal segments darker brown. Wings with a strong grayish yellow tinge, the stigmal region indistinctly darker; veins pale brownish yellow. Venation: *Sc* short, *Sc*₁ ending just beyond the origin of *Rs*; *Sc*₂ some distance from the tip of *Sc*₁, the latter alone being nearly equal to the short sector; *Rs* short, but little longer than the deflection of *R*₄₊₅; *R*₂₊₃ almost straight, running rather close to *R*₁; cell *R*₁ much narrower than *R*₂ at the wing-margin; cell 1st *M*₂ very small, pentagonal; basal deflection of *Cu*₁ beyond the fork of *M*. Abdominal tergites obscure yellowish brown; sternites clearer yellow; in the male a conspicuous subterminal blackish ring on segments five and six, hypopygium obscure yellow. Male hypopygium with the pleurites and appendages about as in the other species of the genus; penis-guard greatly enlarged, the apex widened and concave above, hood-like.

Habitat.—Brazil.

Holotype, ♂, Teffé, December 22, 1919 (H. S. Parish).

Allotopotype, ♀, December 25, 1919.

Paratopotypes, 2 ♂'s, with the type.

Genus **ELEPHANTOMYIA** Osten Sacken.

1859. *Elephantomyia* Osten Sacken, Proc. Acad. Nat. Sci. Phila., p. 220.

The genus *Elephantomyia* has long been referred to the tribe Antochini and later to the Eriopterini. The presence of distinct tibial spurs would indicate that this genus, like *Atarba*, is an aberrant hexatomine form.

Elephantomyia supernumeraria sp. n.

General coloration dark brown; thoracic pleura gray pruinose with two narrow dark brown longitudinal stripes; legs black; wings subhyaline with a heavy brown pattern; a supernumerary cross-vein near the outer end of cell R_2 .

Male.—Length (excluding rostrum) about 5.4 mm.; wing 5.8 mm.; rostrum about 3.9 mm.

Rostrum long and slender, dark brown. Antennae dark brown; verticils elongate. Head gray. Mesonotum dark brown. Pleura pale brown, sparsely pruinose, with two narrow dark brown longitudinal stripes, the dorsal stripe beginning at the cervical sclerites, extending beneath the wing-root; the ventral stripe begins on the mesosternum before the middle coxa, passing beneath the halter to the base of the abdomen. Halteres yellow, the knobs infuscated. Legs with the fore and middle coxae infuscated; posterior coxae less darkened; trochanters obscure yellow, the margin with a brown spot; remainder of the legs black, the bases of the femora narrowly pale; the joint between the femur and tibia is narrowly and indistinctly pale. Wings subhyaline with a heavy and conspicuous brown pattern, distributed as follows: At arculus; a large area at the origin of R_s , extending caudad to vein M ; a small spot at the tip of Sc_1 ; a conspicuous seam at the stigma, continued along the cord to the fork of M ; rounded spots at the tips of veins R_1 and R_2 , the latter extending onto the supernumerary crossvein in cell R_2 ; wing-tip infumed; brownish seams along the outer end of cell $1st\ M_2$ and the basal deflection of Cu_1 ; veins light brown, slightly darker in the infuscated areas. Venation: Sc long, Sc_1 extending to about opposite four-fifths the long R_s ; R_s strongly arcuated at origin; R_2 very short, a little less than m ; a supernumerary crossvein in cell R_2 near its outer end, the tip of vein R_2 beyond it pale and without macrotrichiae; cell $1st\ M_2$ large, rectangular, about as long as a little shorter than vein M_{1+2} beyond it; basal deflection of Cu_1 at or beyond midlength of cell $1st\ M_2$, a little longer than Cu_2 . Abdomen dark brown, the base of the hypopygium a little brighter. Male hypopygium with the two pleural appendages subequal in

length, the outer appendage more slender, at the tip split into two short, subequal points.

Habitat.—Peru.

Holotype, ♂, Napo River, June 8, 1920 (H. S. Parish).

Paratopotype, ♂.

Elephantomyia supernumeraria is distinguished from all the described American species of the genus by the heavily patterned wings and from all known species of the genus by the presence of a supernumerary crossvein in cell R_2 of the wings.

CTENOLIMNOPHILA gen. n.

Antennae with sixteen segments, the flagellar segments short-cylindrical. Tibiae provided with spurs. Wings with Sc_2 at the tip of Sc_1 ; a supernumerary crossvein in cell R_2 ; cell 1st M_2 very long and narrow, irregular in outline, approximately twice as long as the cells beyond it; cell M_1 lacking. Male hypopygium with the outer pleural appendage provided with very long, appressed teeth on the outer face before the tip.

Genotype.—*Ctenolimnophila bivena*, sp. n. (Amazonian Region).

The general appearance of the two species now known to belong to this genus is much more like a *Gnophomyia* than a Limnophiline form. *Gnophomyia decisa* Alexander, described from imperfect material, is now known to be a member of this genus. The tibial spurs in *C. decisa* are much shorter and stouter than in *C. bivena*. The type of hypopygium is strongly suggestive of *Ephelia* and *Atarba*.

Ctenolimnophila bivena sp. n.

Male.—Length 4.5 mm.; wing 4.8–5.3 mm.

Generally similar to *C. decisa* but differing in several important details. The general coloration is dark brown, the legs conspicuously light yellow. The hairs of the legs are longer and more outspreading than in *decisa*. The principal differences between the two forms are found in the wings, as follows:

Wings with a supernumerary crossvein in cell R_3 in addition to the one in cell R_2 , the former lying a short distance proximad of the latter. Wings more uniformly darkened, the radial cells uniformly dark brown, the cubital and anal cells grayish brown; narrow seams and spots at the origin of R_s , along the cord, outer end of cell 1st M_2 and the supernumerary crossveins darker brown; no indications of the three pale spots along the costal margin as in *decisa*; the only pale areas on the wing are the centers of cells 1st M_2 , 2nd M_2 , M_3 and a faint wash before the cord in the end of cell R .

Habitat.—Peru, Brazil.

Holotype, ♂, Napo River, Peru, June 22, 1920 (H. S. Parish).

Paratopotype, ♂; paratype, sex?, Teffé, Brazil, December 24, 1919 (H. S. Parish).

Ctenolimnophila decisa (Alexander)

1914. *Gnophomyia decisa* Alexander, Trans. Am. Ent. Soc., vol. 40, pp. 245, 246.

Pratá, Brazil, June 30, 1919 (H. S. Parish). This specimen differs in a few minor points from typical *decisa* but with the scanty material available it is impossible to separate the species.

Genus **LIMNOPHILA** Macquart.

1834. *Limnophila* Macquart, Suites à Buffon, Tome 1, Hist. Nat. Ins., Dipt., p. 95.

Limnophila (Limnophilella) epiphragmoides Alexander.

1913. *Limnophila epiphragmoides* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 543, 544.

Igarapé Assú, Brazil, January 30, 1912 (H. S. Parish); Type.

Limnophila diversipes sp. n.

General coloration brownish yellow; legs brown, the tips of the tibiae, bases and tips of the metatarsi and the remaining tarsal segments white; wings petiolate, the anal angle practically lacking; membrane hyaline, the tip slightly infuscated; petiole of cell M_2 very short; 2nd *Anal* cell long and narrow.

Sex?—Wing 9 mm.

Rostrum and palpi brown. Antennae broken. Head reddish brown, more yellowish caudally and on the genae. Mesonotum small, pale brownish yellow, unmarked. Pleura yellowish. Halteres broken. Legs with the coxae testaceous yellow; trochanters with a decided greenish tinge; femora brown; tibiae dark brown, the tips broadly (2.4 mm.) and abruptly snowy white; metatarsi brownish black, the extreme bases and the apical third to fifth snowy white, this color most extensive on the posterior legs; remainder of the tarsi white, the terminal segments tinged with greenish. Wings elongate, petiolate; anal angle practically lacking; membrane hyaline, the apex beyond cell 1st M_2 distinctly but faintly infuscated; stigma very small, oval, brown; veins dark brown. All the longitudinal veins beyond the cord with long, conspicuous macrotrichiae; Rs , M , Cu and the *Anal* veins likewise with macrotrichiae, smaller and more scattered toward the base of the wing. Venation: Sc long, Sc_1 extending to slightly beyond midlength of R_2+3 , Sc_2 at the tip of Sc_1 ; Rs long, strongly angulated at origin; R_2+3 almost in alignment with Rs , a little shorter than the distal section of R_2 ; r on R_2 at about three-fifths its length and on R_1 a little more than its length from the tip; basal deflection of R_4+5 short, strongly arcuated, a little longer than the basal deflection of Cu_1 ; cell 1st M_2 long and narrow, rectangular; petiole of cell M_1 very short, less than m , cell M_1 consequently very deep; basal deflection of Cu_1 about one-third its length beyond the fork of M ; Cu_2 approximately four times the basal deflection of Cu_1 ; 2nd *Anal* vein long, running close to and parallel with the anal margin of the wing so that cell

2nd *A* is very long and narrow, widened distally; the two Anal veins run parallel for the greater part of the length of the 2nd. Abdomen broken.

Habitat.—Peru.

Holotype, Sex?, Yurimaguas, April 6, 1920 (H. S. Parish).

Genus **EPIPHRAGMA** Osten Sacken.

1859. *Epiphragma* Osten Sacken, Proc. Acad. Nat. Sci. Phila., p. 233.

Epiphragma fabricii Alexander.

1913. *Epiphragma fabricii* Alexander, Proc. U. S. Nat. Mus., vol. 44, p. 536.

Iquitos, Peru, March 9 to May 6, 1920 (H. S. Parish).

Yurimaguas, Peru, April 10, 1920 (H. S. Parish).

Epiphragma varia (Wiedemann)

1828. *Limnobia varia* Wiedemann, Aussereur. zweifl. Ins., Thl. 1, p. 573.

Teffé, Brazil, January 28, 1920 (H. S. Parish).

Yurimaguas, Peru, March 31, 1920 (H. S. Parish).

Napo River, Peru, June 16, 1920 (H. S. Parish).

Genus **PSARONIUS** Enderlein.

1912. *Psaronius* Enderlein, Zool. Jahrb., Abt. Syst., Bd. 32, H. 1, p. 50

Psaronius obscurus (Fabricius)

1805. *Tipula obscura* Fabricius, Syst. Antl., p. 27.

Igarapé Assú, Brazil, January 29, 1912, to February 4, 1912 (H. S. Parish).

Psaronius pallipes Alexander.

1920. *Psaronius pallipes* Alexander, Ent. News, vol. 31, p. 73.

Known only from the types, taken at Pratá, Brazil, June 30 and July 5, 1919 (H. S. Parish).

Psaronius pygmaeus Alexander.

1914. *Psaronius pygmaeus* Alexander, Trans. Am. Ent. Soc., vol. 40, pp. 249, 250.

Obidos, Brazil, September 6, 1919 (H. S. Parish).

Yurimaguas, Peru, April 1, 1920 (H. S. Parish).

Psaronius trianguliferus sp. n.

General coloration yellowish brown, the mesonotal praescutum with three darker stripes, the lateral ones incurved to the median stripe at their anterior ends, femora with a narrow, dark brown subterminal ring, wings brownish yellow, the veins broadly seamed with grayish; cell 2nd *R*₁ elongate-triangular, veins *R*₁ and *R*₂ being subcontiguous at their distal ends.

Female.—Length about 16 mm.; wing 11.5 mm.

Rostrum and palpi dark brown. Antennae with the scapal segments obscure yellow, the basal segments of the flagellum brownish

yellow, passing into dark brown before the tip of the organ. Head obscure yellow with a delicate brown median line. Mesonotal praescutum yellowish brown with three darker brown stripes; median stripe pale anteriorly but becoming better defined toward the suture; lateral margins and a capillary median vitta darker brown; lateral stripes brown, their cephalic ends directed proximad, indistinctly confluent with the median stripe, isolating two pale submedian areas immediately before the suture; scutum brown, each lobe with a brownish yellow circle, enclosing a dark center; scutellum and postnotum brown. Pleura obscure yellow with a relatively narrow dorsal stripe; mesosternum also brown, these two dark areas enclosing between them an ill-defined longitudinal pale stripe. Halteres with the stem yellow, the knobs dark brown. Legs with the coxae and trochanters obscure yellow; femora yellowish, before the tips with a narrow, subterminal brown ring; tibiae yellow, the extreme bases narrowly infuscated, the tips narrowly dark brownish black; tarsi obscure yellow, the terminal segments slightly darker. Wings with a strong brownish yellow tinge, the costal cell more brownish, the subcostal cell clear yellow; darker brown clouds at the base of cell R ; at origin of R_s ; fork of R_s and at the stigma; all the veins are very broadly seamed with greyish, these seams restricting the ground-color to narrow longitudinal streaks; basal third of cell R_2 yellow, the distal two-thirds greyish; veins brown. Venation: Sc_1 ending immediately beyond r ; R_s long, strongly angulated at origin, a little longer than R_2+3 ; R_2 subcontiguous with R_1 at costa so that cell 2nd R_1 has an elongate-triangular shape; petiole of cell M_1 a little shorter than the basal deflection of R_4+s ; m about one-half the outer deflection of M_3 ; Cu_2 shorter than the basal deflection of Cu_1 . Abdominal tergites brown, each segment slightly paler basally; sternites yellow.

Habitat.—Peru.

Holotype, ♀, Yurimaguas, April 6, 1920 (H. S. Parish).

By means of the author's key to the species of the genus *Psaronius* (Trans. Amer. Ent. Soc., vol. 40, p. 250. 1914), *P. trianguliferus* runs out to couplet 3, both of the included species having the mesonotum practically unicolorous. From the more recently described *P. pallipes* Alexander (Brazil), the present species differs in the venation and the coloration of the tarsi.

***Psaronius mancus* sp. n.**

Mesonotal praescutum brownish yellow with three darker brown stripes, the median stripe with a capillary darker brown line that continues back to the base of the abdomen; femora with a narrow subterminal brownish black ring; tibiae light brown, the base and tip blackened; wings brownish yellow, the veins conspicuously seamed with brown; vein R_2 entirely lacking; cell M_1 shorter than its petiole.

Female.—Length 21–22 mm.; wing 14.2–15 mm.

Rostrum and palpi dark brown. Antennae short, the scape and first flagellar segment brownish yellow; remainder of the flagellum dark brown. Head brownish yellow, the dorso-median area of the vertex darker brown. Mesonotal praescutum brownish yellow with three darker brown stripes; median stripe with the lateral margins and a capillary median line still darker brown; pseudosutural foveae conspicuous; scutum dark brown, the median area with a capillary dark line; scutellum pale brownish testaceous with a narrow brown median line; postnotum pale brown, the median line darker. Pleura light brown, variegated with darker brown. Sternum light yellowish brown. Halteres dark brown, the base of the stem paler. Legs with the coxae light brown, dark brown basally; trochanters brownish yellow; femora brownish yellow, a narrow (0.6 mm.) brownish black subterminal ring, preceded by a broad but ill-defined yellowish ring, the apex narrowly pale; tibiae light brown, the tip and the slightly narrower base black; metatarsi light brown, the tips dark brown; remainder of the tarsi dark brown. Wings with a strong brownish yellow tinge; cell *C* brown, cell *Sc* yellowish; very broad brown clouds at the base of cell *R*, origin and fork of *Rs* and as conspicuous seams along the longitudinal veins, in cells *M*, 1st *A* and 2nd *A* suffusing most of the cells; veins dark brown, darkest in the clouded areas. Venation: vein *R*₂ entirely lacking as in *P. abnormis* Alexander and *P. brevitibia* Alexander; *R*₂+₃ considerably longer than the deflection of *R*₄+₅; *r-m* longer than the basal deflection of *M*₁+₂; cell *M*₁ considerably shorter than its petiole; fusion of *Cu*₁ and *M*₃ slight; vein *Cu*₂ longer than the basal deflection of *M*₁+₂; 2nd *Anal* vein rather long, ending a trifle before the origin of *Rs*. Abdomen dark brown. Ovipositor with the valves comparatively short, blackened basally; tergal valves gently up-curved, their apices pale.

Habitat.—Brazil.

Holotype, ♀, Teffé, December 20, 1919 (H. S. Parish).

Paratopotype, ♀, December 12, 1919.

Psaronius mancus is readily told from all described species of the genus by the diagnostic characters given above. Its only close relative is *P. brevitibia* Alexander, likewise from the Amazonian Region.

Psaronius brevitibia Alexander.

1920. *Psaronius brevitibia* Alexander, Ent. News, vol. 31, p. 74.

Still known only from the type specimen, taken at Obidos, Brazil, August 28, 1919 (H. S. Parish).

Genus **POLYMER**A Wiedemann.

1821. *Polymera* Wiedemann, Dipt. Exot., p. 40.

Polymera includes nearly a score of species that are confined to tropical and subtropical America. The genus is abundantly rep-

resented in the Amazonian region, where it must be considered as being one of the most characteristic Tipulid genera.

Polymera conjuncta Alexander.

1913. *Polymera conjuncta* Alexander, Proc. U. S. Nat. Mus., vol. 44, p. 529.

The types were taken at Igarapé Assú, Brazil, February 4, 1912 by H. S. Parish.

Polymera conjunctoides Alexander.

1920. *Polymera conjunctoides* Alexander, Ent. News, vol. 31, pp. 74, 75.

Itacoatiára, Brazil, October 16, 1919 (H. S. Parish); Type.

Manáos, Brazil, October 31, 1919 (H. S. Parish).

Napo River, Peru, June 9-15, 1920 (H. S. Parish).

Polymera parishi Alexander.

1920. *Polymera parishi* Alexander, Can. Ent., vol. 52, pp. 143, 144.

Manáos, Brazil, October 31-November 4, 1919 (H. S. Parish).

The above three species belong to the subgenus *Polymerodes* Alexander, in which the tibial spurs are quite lacking.

Polymera pleuralis Alexander.

1913. *Polymera pleuralis* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 528, 529.

Igarapé Assú, Brazil, January 19-February 7, 1912 (H. S. Parish); Types.

Yurimaguas, Peru, April 1, 1920 (H. S. Parish).

Polymera obscura Macquart.

1838. *Polymera obscura* Macquart, Dipt. Exot., Tome 1, pt. 1, p. 65.

Igarapé Assú, Brazil, January 19-February 4, 1912 (H. S. Parish).

Itacoatiára, Brazil, October 12-22, 1919 (H. S. Parish).

Teffé, Brazil, December 4-27, 1919 (H. S. Parish).

Iquitos, Peru, May 18, 1920 (H. S. Parish).

Yurimaguas, Peru, April 17, 1920 (H. S. Parish).

Polymera thoracica Alexander.

1913. *Polymera thoracica* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 533, 534.

Known only from the type locality, Igarapé Assú, Brazil, February 7, 1912 (H. S. Parish).

Polymera hirticornis (Fabricius)

1805. *Chironomus hirticornis* Fabricius, Syst. Antliat., p. 46.

Igarapé Assú, Brazil, January 23, 1912 (H. S. Parish).

Obidos, Brazil, September 10, 1919 (H. S. Parish).

***Polymera superba* Alexander.**

1913. *Polymera superba* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 530, 531.

Igarapé Assú, Brazil, January 24, 1912 (H. S. Parish).

Teffé, Brazil, December 24–26, 1919 (H. S. Parish).

***Polymera niveitarsis* Alexander.**

1913. *Polymera niveitarsis* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 532, 533.

Igarapé Assú, Brazil, January 29, 1912 (H. S. Parish).

Pratá, Brazil, June 30, 1919 (H. S. Parish).

Iquitos, Peru, May 11–15, 1920 (H. S. Parish).

Yurimaguas, Peru, April 7–10, 1920 (H. S. Parish).

***Polymera crystalloptera* sp. n.**

Close to *P. niveitarsis* Alexander; wings crystalline hyaline; *r* close to the tip of *R*₁; *r-m* before the fork of *R*_s.

Male.—Length 7.5–8.5 mm.; wing 6.5–7.5 mm.

Rostrum and palpi orange-yellow. Antennae of the male elongate, approximately as long as the body; scapal segments tumid, brownish orange; flagellar segments black, in structure quite as in *P. niveitarsis*, elongate-cylindrical, not constricted, provided with abundant erect black hairs. Head dark brown. Mesonotal praescutum reddish yellow with a broad reddish brown median stripe that is sometimes obliterated; scutum and scutellum reddish brown, the postnotum slightly paler. Pleura obscure reddish yellow. Halteres brown. Legs with the coxae and trochanters obscure yellow; femora dark brown, paler basally; tibiae and tarsi dark brown, posterior metatarsi with the apical half snowy white; remaining tarsal segments similar, only the terminal segment infuscated. Wings crystalline hyaline, highly iridescent; veins very conspicuous, brownish black. Venation: Arculus interrupted; *r* far out near the tip of *R*₁, the distal section of the latter vein from one to two times *r*; *r-m* connecting *R*_s immediately before the fork; basal deflection of *Cu*₁ before the fork of *M*, the distance about equal to *r*; cell *M*₁ small, vein *M*₂ being about equal to or shorter than the basal deflection of *Cu*₁; petiole of cell *M*₃ about two-thirds to three-fourths the cell. Abdominal tergites dark brown; basal sternites yellowish, becoming more obscure toward the tip of the organ; hypopygium pale brown, the appendages black.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 2, 1920 (H. S. Parish).

Paratopotype, ♂, April 8, 1920.

Genus **PENTHOPTERA** Schiner.

1863. *Penthoptera* Schiner, Wien. Ent. Monatsch., vol. 220.

***Penthoptera batesi* sp. n.**

Antennae of the male rather short; general coloration reddish yellow, the pleura testaceous yellow; tarsi white, this color including

all but the basal fifth of the posterior metatarsus; wings subhyaline, the wing-tip a little darker; cell M_1 lacking; basal deflection of R_{4+5} distinct.

Male.—Length 9.2 mm.; wing 8.3 mm.

Rostrum obscure brownish yellow; palpi dark brown. Antennae of the male rather short, if bent backward extending about to the wing-root; scapal segments obscure yellow, the flagellum dark brown. Head brown, more grayish adjoining the margin of the eyes. Mesonotum reddish yellow without apparent darker stripes. Pleura testaceous yellow. Halteres brown. Legs with the coxae and trochanters testaceous yellow; remainder of the legs dark brown, the femoral bases paler; terminal tarsal segments snowy-white, on the fore legs including the apical fifth of the metatarsus; on the middle legs, the white includes a little less than the apical half; on the posterior legs, the white includes the apical four-fifths, the basal fifth being darkened. Wings subhyaline, cell Sc faintly darker; stigma very indistinct to practically lacking; apex of the wing beyond the level of r and the outer end of cell $1st M_2$ darkened. Venation: Sc long, Sc_1 ending a little beyond the level of $r-m$; Rs long, arcuated at origin; R_{2+3} about two-fifths of Rs , in alignment with R_2 ; r on R_2 about the length of $r-m$ beyond the fork of R_{2+3} , the distal section of R_1 being about twice r ; basal deflection of R_{4+5} longer than r ; cell $1st M_2$ elongate-rectangular, about as long as vein M_{1+2} beyond it; cell M_1 lacking; basal deflection of Cu_1 a little less than half its length beyond the fork of M ; basal deflection of Cu_1 about equal to Cu_2 . Abdomen dark brown; sternites obscure yellow. Male hypopygium with the pleural appendages very long and slender.

Habitat.—Brazil.

Holotype, ♂, Teffé, January 28, 1920 (H. S. Parish).

Penthoptera batesi is dedicated to the memory of the great naturalist, Henry W. Bates, who spent more than four years at Teffé.

Genus **ERIOCERA** Macquart.

1838. *Eriocera* Macquart, Dipt. Exot., Tome 1, p. 74.

Eriocera macrocera Alexander.

1914. *Eriocera macrocera* Alexander, Psyche, vol. 21, p. 40.

This interesting crane-fly is still known only from the unique type, taken at Igarapé Assú, Brazil, January 30, 1912 (H. S. Parish).

Eriocera amazonicola Alexander.

1920. *Eriocera amazonicola* Alexander, Can. Ent., vol. 52, p. 144.

Manáos, Brazil, November 4, 1919 (H. S. Parish); Type.

Flores, Brazil, November 12, 1919 (H. S. Parish).

Genus **ERIOPTERA** Meigen.

1803. *Erioptera* Meigen, Illiger's Mag., Bd. 2, p. 262.

Species of the genus *Erioptera* are relatively abundant in the Amazonian Region. Many of these species belong to the subgenus *Mesocyphona* which reaches its greatest specific development in the Tropics of the New World. A few other forms belong to the typical subgenus *Erioptera*, although the species of the *annulipes* group must be considered as being somewhat aberrant.

Erioptera (Erioptera) micromyia Alexander. Plate IV, fig. 8.

1920. *Erioptera (Erioptera) micromyia* Alexander, Journ. N. Y. Ent. Soc., vol. 28, p. 8.

The type female was from Prata, Brazil, June 30, 1919 (H. S. Parish). A male specimen was taken by Parish at Yurimaguas, Peru, April 17, 1920, and is herewith described as the allotype.

Allotype.—Male, length about 2.5 mm.; wing 2.5 mm.

Similar to the type female. Male hypopygium (Plate IV, fig. 8) with the pleurites comparatively large and stout; two pleural appendages, the outer one deeply bifid, the outer branch a slender chitinized spine, the inner branch shorter, stout, the apex a little enlarged and covered with minute spinules; inner pleural appendage a flattened arm whose apex is obtusely rounded and provided with a few tiny setae. Gonapophyses very large and powerful, about as long as the pleurites themselves, each apophyse appearing as a blackened blade directed caudad, the acute tips curved proximad and subcontiguous with one another at the midline of the body; before the tip on the proximal face, each apophyse is dilated into a thin, flaring blade whose margin is weakly serrate.

Erioptera (Erioptera) cladophora Alexander.

1920. *Erioptera (Mesocyphona) cladophora* Alexander, Can. Ent., vol. 52, p. 142.

The types are from Manáos, Brazil, October 31 to November 4, 1919 (H. S. Parish); Itacoatiara, Brazil, October 22, 1919 (H. S. Parish). Additional specimens were taken at Iquitos, Peru, March 10 to May 12, 1920 (H. S. Parish); Yurimaguas, Peru, April 17, 1920 (H. S. Parish).

Erioptera (Erioptera) annulipes Williston.

1896. *Erioptera annulipes* Williston, Trans. Ent. Soc. Lond., 1896, p. 294.

Igarapé Assú, Brazil, January 19, 1912 (H. S. Parish).

Yurimaguas, Peru, April 7, 1920 (H. S. Parish).

Amazonian material was sent to Mr. Edwards, of the British Museum, for comparison with Williston's types (females). Mr. Edwards reports the following differences: basal section of R_1 shorter than crossvein, less than half as long as R_{2+3} ; white pleural

stripe less conspicuous; white rings on legs rather narrower, the seven black and white rings on hind tibiae all equal in length. Mr. Edwards thinks that the two forms are probably specifically the same, an opinion in which the writer concurs.

Erioptera (Erioptera) apicialba sp. n.

Sex?—Wing 2.8 mm.

The type is badly eaten by ants. The species is related to *E. annulipes* Williston, differing as follows: General coloration much darker. Mesonotal praescutum dark gray with a broad brownish median stripe that is narrowly divided by a pale line, the tuberculate pits lying one on either margin of this pale line; a small obscure yellow area before the pseudosutural foveae; margin of the praescutum narrowly whitish. Pleura dark brown; a narrow, but conspicuous, ventral silvery white longitudinal stripe extending from behind the fore coxae to the base of the abdomen; above the hind coxae a much abbreviated similar stripe lying parallel with the first; sternum heavily gray pruinose; dorso-pleural membranes sulphur yellow. Legs with the trochanters brown; tibiae with three black bands, on the middle legs these being much broader than the pale interspaces, on the posterior legs as wide as or narrower than the interspaces. Wings with a uniform gray tinge; an indistinct whitish suffusion across the disk in the region of the cord; the costal margin, including cells *C* and *Sc*, white, interrupted by three small dark brown spots, one each at the tips of *Sc*₁, *R*₁ and *R*₂, these dark areas being smaller than the interspaces; the entire wing-apex is broadly white excepting a narrow seam along vein *R*₄₊₅ which continues almost to the margin; rounded white spots in the ends of cells 2nd *R*₁, *M*₃, *Cu*₁ and *Cu*; veins dark brown, paler in the hyaline areas, the veins that traverse the wing-apex being snowy-white, including their macrotrichiae; narrow brown seams at *Sc*₂ and along the cord. Venation: cell 1st *M*₂ open by the atrophy of *m* as in this group of species; vein 2nd *A* gently arcuated near its tip.

Habitat.—Brazil.

Holotype, Sex?, Teffé, December 29, 1919 (H. S. Parish).

Erioptera (Mesocyphona) parva brasiliensis Alexander.

1913. *Erioptera parva brasiliensis* Alexander, Proc. U. S. Nat. Mus., vol. 44, p. 514.

The types were from Igarapé Assú, Brazil, January 19–February 7, 1912 (H. S. Parish). Other material is available as follows: Pratá, June 30, 1919 (H. S. Parish).

Manáos, Brazil, November 1, 1919 (H. S. Parish).

Teffé, Brazil, January 16, 1920 (H. S. Parish).

Iquitos, Peru, March 20, 1920 (H. S. Parish).

Yurimaguas, Peru, March 25–April 15, 1920 (H. S. Parish).

Napo River, Peru, June 15, 1920 (H. S. Parish).

Erioptera (Mesocyphona) bicinctipes Alexander.

1913. *Erioptera bicinctipes* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 519, 520.

The types were from Igarapé Assú, Brazil, January 25 to February 7, 1912 (H. S. Parish). The following additional records are now available:

Pratá, June 30, 1919 (H. S. Parish).

Itacoatiára, Brazil, October 24, 1919 (H. S. Parish).

Flores, Brazil, November 19, 1919 (H. S. Parish).

Teffé, Brazil, December 22, 1919 (H. S. Parish).

Iquitos, Peru, March, 1920 (H. S. Parish).

Yurimaguas, Peru, April 7, 1920 (H. S. Parish).

Napo River, Peru, June 6, 1920 (H. S. Parish).

Erioptera (Mesocyphona) diffusa sp. n.

Related to *E. eiseni* Alexander; coloration of the mesonotum yellowish, without markings; wings pale brown with large, ill-defined whitish subhyaline spots; tip of vein M_3 lying free in the membrane.

Female.—Length 3.2 mm.; wing 2.9 mm.

Head badly eaten by ants. Mesonotum yellow without darker markings. Pleura light yellow with two narrow, rather ill-defined brownish longitudinal stripes. Halteres broken. Legs with the coxae and trochanters light yellow; femora pale brownish yellow, the tips conspicuously golden yellow; a broad but ill-defined brown subapical ring; sometimes there is a second dark ring near mid-length of the segment; remainder of the legs yellow. Wings broad, the costal region brown, the remainder of the membrane rather pale yellowish brown, with about sixteen whitish subhyaline spots arranged as follows: at arculus, at origin of R_s , at Sc_2 , along the cord and about ten at the apices of the cells between the ends of the longitudinal veins; veins pale yellow. Venation: tip of vein M_3 lying free in the membrane, its basal connection with M_{1+2} lost by atrophy; tip of vein *2nd A* curved strongly toward the wing-tip. Abdomen brownish yellow, the sternites paler. Ovipositor with the valves long and slender, the tergal valves acute at their tips.

Habitat.—Brazil.

Holotype, ♀, Teffé, December 23, 1919 (H. S. Parish).

Erioptera (Mesocyphona) invariegata sp. n.

General coloration uniformly dark brown, this color including the legs; wings uniformly brownish gray.

Female.—Length about 2.5 mm.; wing 2.9 mm.

Rostrum and palpi dark brown. Antennae dark brown, the flagellar segments cylindrical. Head dark brown. Thorax dark

brown, the pleura faintly dusted with gray. Halteres pale brown, the knobs darker brown. Legs with the coxae and trochanters dark brown; remainder of the legs uniformly brown. Wings uniformly brownish gray; veins pale brown. Venation: *Sc* long, *Sc*₁ ending about opposite one-third the length of *R*₂₊₃; *r* on *R*₂ a little more than its own length beyond the fork of *R*₂₊₃; cell 1st *M*₂ open by the atrophy of the outer deflection of *M*₃; basal deflection of *Cu*₁ immediately before the fork of *M*; 2nd *Anal* vein weakly bisinuous. Abdomen dark brown; valves of the ovipositor long and slender, acute; in the type, the tips of the tergal valves are decurved.

Habitat.—Peru.

Holotype, ♀, Yurimaguas, March 23, 1920 (H. S. Parish).

Erioptera invariata differs from the other species of *Mesocyphona* with unmarked wings in the uniformly dark brown legs.

Genus **MOLOPHILUS** Curtis

1833. *Molophilus* Curtis, Brit. Ent., p. 444.

EUMOLOPHILUS subgen. n.

Generally similar to *Molophilus*, differing as follows: The tibiae and metatarsi of the hind legs in both sexes are adorned with conspicuous erect fringes of long, dark hairs that give to the legs a fan-like appearance. Male hypopygium with a conspicuous lyri-form plate.

Type of the subgenus.—*Molophilus (Eumolophilus) thaumastopodus* Alexander (Brazil).

This subgeneric group is proposed for two species of Amazonian crane-flies that present a remarkable appearance, due to the conspicuous trichiation of the legs, especially the posterior tibiae and metatarsi. The general appearance of the flies is not unlike that of certain species of the Culicid genus *Sabethes* inhabiting this same region. Although the general appearance of the two species referred to this subgenus is very unlike typical *Molophilus*, the structural details show the two groups to be closely allied. Besides the type of the subgenus, the new species *M. (E.) pennipes* belongs to this group.

Molophilus (Eumolophilus) pennipes sp. n.

Male.—Length about 5 mm.; wing 4.5 mm.; hind leg, femur, 4.9 mm.; tibia 3.9 mm.

Female.—Length about 5 mm., wing 4.8 mm.; hind leg, femur, 5.1 mm.; tibia 4.1 mm.

Generally similar to *M. (E.) thaumastopodus* Alexander, differing as follows: size much larger as shown by the measurements. An-

tennae of the male elongate, bicolorous, the base and apex of each flagellar segment pale, the middle portion of each segment provided with long, conspicuous, outspreading hairs, very much as in males of the genus *Polymera*. The oar-like brushes on the posterior legs with conspicuous violaceous reflexions. Male hypopygium with the lyriform plate small, the two arms powerful, divergent, the tips incurved; a little more than the apical third of each arm is provided on the inner face with conspicuous erect spines, those toward the tip more appressed; among these spines, at about two-thirds the length of the arm is an extensive cushion of short, erect, bristle-like spines. In *M. thaumastopodus*, the arms of the lyriform plate are slender, directed caudad and laterad, with only the tips directed a little proximad; these arms are entirely smooth with the exception of four or five appressed spines at the very tip on the inner face; there is no evidence of a cushion of shorter bristles.

Habitat.—Brazil, Peru.

Holotype, ♂, Santa Felipe, Brazil, June 26, 1920 (H. S. Parish).

Allotype, ♀, Iquitos, Peru, May 25, 1920 (H. S. Parish).

Molophilus (**Eumolophilus**) **thaumastopodus** Alexander.

1913. *Molophilus thaumastopodus* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 510, 511.

The types were from Pará and Igarapé Assú, Brazil. Other material is from Flores, Brazil, November 10, 1919; Manáos, Brazil, November 1, 1919 (H. S. Parish); and Teffé, Brazil (H. S. Parish).

Genus **CRYPTOLABIS** Osten Sacken.

1859. *Cryptolabis* Osten Sacken, Proc. Acad. Nat. Sci. Phila., p. 224.

Cryptolabis (**Cryptolabis**) **tenuicincta** sp. n.

General coloration whitish testaceous, thoracic pleura with a conspicuous brown longitudinal stripe; wings subhyaline with a brown spot at the arculus and a narrow brown crossband at the cord; cell M_2 very deep, extending basad almost to the fork of M , an apparent $m-cu$ crossvein being formed.

Sex?—Wing 4.2 mm.

Head lacking in the unique type. Mesonotum pale whitish testaceous, unmarked with darker. Pleura concolorous with the dorsum, the dorsal sclerites with a broad, dark brown, longitudinal stripe extending from the cervical sclerites to beneath the root of the halteres. Halteres pale, the knobs broken. Legs with the coxae and trochanters whitish testaceous; femora and tibiae pale; tarsi broken; femora and tibiae with conspicuous, erect, pale hairs. Wings subhyaline; a brownish spot at the arculus; a narrow and indistinct brownish seam along the cord, beginning as a faint double marking on R_s and R_{2+3} , continued caudad across the wing to the posterior margin; veins pale, darker in the infuscated areas. Sparse macrotrichiae in the distal ends of cells 2nd R_1 , R_2 , R_3 , R_4 , M_2 , M_3 .

and Cu_1 . Venation: Rs short, straight or feebly convex as in the genus, cell 1st R , consequently subtriangular as in *C. paradoxa* and allies; R_{2+3} a little more than one-half Rs ; basal deflection of R_2 perpendicular to R_{2+3} , in alignment with r ; basal deflection of R_{4+5} punctiform, almost in alignment with Rs ; $r-m$ long, about two-thirds of Rs ; cell M_3 very deep, vein M_3 originating basad of the deflection of Cu_1 , in all other species of the genus, vein M_3 arises distad of the deflection of Cu_1 and cell M_3 is consequently petiolate; in the present species, cell M_3 is entirely sessile; there thus *appears* to be a long $m-cu$ crossvein preserved that is about half as long as the deflection of Cu_1 . Abdomen lacking.

Habitat.—Peru.

Holotype, Sex?, Yurimaguas, April 10, 1920 (H. S. Parish).

Although the type specimen of this interesting new species of *Cryptolabis* is badly eaten by Psocids, it is described in order to present a new venational peculiarity in the tribe, the *apparent* retention of the $m-cu$ crossvein. The discovery of this fly lends support to Tillyard's theory of a four-branched media in the generalized Diptera. By adopting this theory in the present instance, the *apparent* $m-cu$ crossvein becomes the basal section of M_4 and this would seem to be a far more logical interpretation than to consider the element as being $m-cu$, since this is lacking in almost every known Limnobiine crane-fly.

Genus **GNOPHOMYIA** Osten Sacken.

1859. *Gnophomyia* Osten Sacken, Proc. Acad. Nat. Sci. Phila., p. 223.

Species of *Gnophomyia* are rather numerous in the Amazonian Region. Additional species will very probably be discovered, especially in Peruvian territory.

Gnophomyia rubicundula sp. n.

General coloration black, the mesonotum and dorsal thoracic pleurites reddish orange; wings with a brownish tinge; no macrotrichiae in the cells of the wing; Sc long, ending opposite r ; Rs relatively short and straight; veins R_2 and R_3 long and parallel; basal deflection of R_{4+5} very short, in alignment with Rs .

Male.—Length about 7.8 mm.; wing 7.8 mm.

Rostrum and palpi black. Antennae black, moderately elongated; flagellar segments cylindrical. Head black. Pronotum black, the lateral margins of the scutellum yellowish. Mesonotum reddish orange, unmarked. Propleura and ventral portions of the mesopleura and metapleura blackish; dorsal pleurites reddish orange. Sternites black. Halteres black, the base of the stem obscure orange. Legs with the coxae and trochanters black; remainder of the legs black, the extreme bases of the fore femora a little brightened. Wings with a brownish tinge; costal and subcostal cells and

the anal angle a little darker; stigma very narrow and indistinctly brownish; veins brownish black. Venation: *Sc* long, *Sc*₁ extending to just beyond *r*, *Sc*₂ some distance from the tip of *Sc*₁, the latter alone being longer than the basal deflection of *Cu*₁; *Rs* relatively short and almost straight; *R*₂₊₃ about one-third longer than the basal deflection of *Cu*₁ and more than one-half of *Rs*; *r* on *R*₂ a little more than its own length beyond the fork of *R*₂₊₃; veins *R*₂ and *R*₃ long, running parallel to one another; basal deflection of *R*₄₊₅ very short, almost in alignment with *Rs* and the distal section of *R*₄₊₅; cell 1st *M*₂ long and narrow, widened distally, *m* and the outer deflection of *M*₃ subequal; basal deflection of *Cu*₁ at about one-third the length of cell 1st *M*₂; vein 2nd *A* straight. Abdomen black.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 1, 1920 (H. S. Parish).

***Gnophomyia axillaris* sp. n.**

General coloration black; wings subhyaline, the costal and subcostal cells, the stigma and the wing-axil brown.

Male.—Length about 6 mm.; wing 6.3 mm.

Rostrum and palpi black. Antennae black. Head black. Thorax deep black, including the legs and halteres. Wings subhyaline; costal and subcostal cells, the stigma and the wing-axil brown; faint brown seams along *Cu* and at the wing-apex; veins dark brown. Venation: *Sc* long, *Sc*₁ extending to beyond two-thirds the length of *Rs*; *Sc*₂ some distance from the tip of *Sc*₁, the latter alone being nearly equal to *R*₂₊₃; *Rs* straight, in alignment with *R*₄₊₅, the deflection of the latter obliterated; *R*₂₊₃ straight; *r* faint, on *R*₂ at about its own length beyond the fork of *R*₂₊₃; cell 1st *M*₂ long and narrow, widened distally; basal deflection of *Cu*₁ at just before one-third its length. Abdomen black. Male hypopygium with the longest pleural appendage acicular, tapering to the subacute tip.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 24, 1920 (H. S. Parish).

***Gnophomyia nigrina* (Wiedemann)**

Igarapé Assú, Brazil, July 16, 1919 (H. S. Parish).

Pratá, Brazil, July 1-4, 1919 (H. S. Parish).

Teffé, Brazil, December 25, 1919 (H. S. Parish).

Yurimaguas, Peru, March 21-April 20, 1920 (H. S. Parish).

***Gnophomyia subhyalina* Alexander.**

1913. *Gnophomyia subhyalina* Alexander, Proc. U. S. Nat. Mus., vol. 44, p. 523.

Igarapé Assú, Brazil, 1912 (H. S. Parish).

Pratá, Brazil, July 4, 1919 (H. S. Parish).

Flores, Brazil, November 14, 1919 (H. S. Parish).

Teffé, Brazil, December 22, 1919 (H. S. Parish).

Gnophomyia bisecta Alexander.

1920. *Gnophomyia bisecta* Alexander, Ent. News, vol. 31, pp. 72, 73.

The type was from Parintins, Brazil, October 3, 1919 (H. S. Parish). Other specimens were taken at Manáos, Brazil, October 31, 1919, and at Teffé, Brazil, December 16–23, 1920 (H. S. Parish).

Gnophomyia osten-sackeni Skuse.

1887. *Gnophomyia fascipennis* Osten Sacken, Berl. Ent. Zeitsch., Bd. 31, pt. 2, pp. 199, 200 (preoccupied).

1889. *Gnophomyia osten-sackeni* Skuse, Proc. Linn. Soc. New South Wales, ser. 2, vol. 4, p. 825.

The type was collected along the Amazon River by Bates.

Gnophomyia leucoplaca sp. n.

General coloration black; mesonotal scutum, scutellum and postnotum and the dorsal sclerites of the pleura orange; wings dark brown with a broad whitish crossband near midlength; cells of the wing beyond the cord with abundant macrotrichiae.

Female.—Length 7.7 mm.; wing 7 mm.

Rostrum and palpi black. Antennae black, rather long for this sex, the segments oval. Head black. Pronotum black. Mesonotal praescutum black, the lateral margins obscure orange; remainder of the mesonotum orange. Pleura with the ventral sclerites black, the dorsal region abruptly orange; a brownish spot beneath the wing-root. Halteres brownish black, the extreme base of the stem indistinctly paler. Legs black. Wings dark brown with a broad whitish crossband near midlength; costal and subcostal cells uniformly dark; base of the wing darkened to slightly beyond the level of the origin of R_s , paler brown in the anal cells, this color continued indistinctly along vein Cu to the wing-margin; wing-apex dark brown, this including all of cells $2nd\ R_1$, R_2 , R_3 , R_5 , $2nd\ M_2$, the outer end of $1st\ R_1$; the cephalic half of $1st\ M_2$; all but the base of M_3 and the outer cephalic end of Cu_1 ; the white crossband includes all but the base and tip of cell $1st\ R_1$; ends of cells R , M and Cu ; bases of cells $1st\ M_2$, M_3 and Cu_1 . Conspicuous macrotrichiae in cells $2nd\ R_1$, R_2 , R_3 , R_5 , $1st\ M_2$, $2nd\ M_2$, M_3 and Cu_1 , thus occupying practically all the wing-disk beyond the cord. Venation: Sc moderately long, Sc_1 extending to just before the end of R_s , Sc_2 rather close to the tip of Sc_1 , the latter being a little shorter than m ; R_s long, gently arcuated; R_2+3 shorter than the basal deflection of Cu_1 ; r on R_2+3 immediately before the fork; basal deflection of R_4+5 weakly angulated; cell $1st\ M_2$ small, subquadrate; m and outer deflection of M_3 subequal; basal deflection of Cu_1 shortly beyond the fork of M ; vein $2nd\ A$ sinuous. Abdomen black. Ovipositor with the tergal valves slender, strongly upcurved.

Habitat.—Brazil.

Holotype, ♀, Teffé, January 12, 1920 (H. S. Parish).

Genus **GONOMYIA** Meigen.

1818. *Gonomyia* Meigen, Syst. Besch., Bd. 1, p. 146.

The genus *Gonomyia* is one of the characteristic Tipulid genera throughout the tropics of the New World. Species of the sub-genus *Leiponeura* Skuse are especially abundant in the Amazonian Region.

Gonomyia (Progonomyia) parænsis Alexander.

1920. *Gonomyia (Gonomyella) parænsis* Alexander, Journ. N. Y. Ent. Soc., vol. 28, pp. 7, 8.

The types were taken at Prata, Brazil, June 30, 1919 (H. S. Parish).

The name *Progonomyia* is a re-naming of *Gonomyella* Alexander.

Gonomyia (Leiponeura) pleuralis (Williston)

1896. *Atarba pleuralis* Williston, Trans. Ent. Soc. Lond., 1896, p. 289.

Manaos, Brazil, October 31–November 4, 1919 (H. S. Parish).

Flores, Brazil, November 10, 1919 (H. S. Parish).

Gonomyia (Leiponeura) amazona Alexander.

1912. *Gonomyia (Leiponeura) amazona* Alexander, Ent. News, vol. 23, pp. 418–420.

Napo River, Peru, June 15, 1920 (H. S. Parish).

The male hypopygium was described and figured by the writer at the time of the original characterization of the species. The details of the pleurites and appendages are not clearly indicated there and may be further discussed as follows:

Outer lateral angle of the pleurite produced into a large, fleshy cylindrical lobe; two pleural appendages, the ventral appendage small, chitinized, appearing as a small blackened cylinder with the tip narrowly split, at the base with an acute blackened spine; dorsal pleural appendage fleshy, much larger than the chitinized appendage, before the tip with a small acute spine, at the tip with two powerful bristles; proximal face with about a dozen additional bristles.

Gonomyia (Leiponeura) acuminata sp. n. Plate IV, fig. 1.

Belongs to the *cinerea* group; antennal flagellum orange-yellow on the basal half; head yellow with a brown vertical mark; thoracic pleura with a conspicuous longitudinal yellow stripe; wings with *Sc* short; male hypopygium with four pleural appendages, the longest acuminate, bearing a long, acute spine a short distance beyond the base.

Male.—Length about 3.8 mm.; wing 3.7 mm.

Female.—Length about 4.6 mm.; wing 4.5 mm.

Rostrum and palpi dark brown. Antennae with the scape dark brown; flagellar segments orange-yellow, on the outer half of the organ passing into brown; flagellar segments provided with very long verticils in the male. Head light yellow, the vertex with a large median dark brown mark. Pronotum yellow, dark brown medially, the scutellum light sulphur yellow. Mesonotum dark brown, the scutellum narrowly margined posteriorly with obscure yellow. Pleura deep purplish brown, sparsely pruinose; dorsal sclerites obscure brownish yellow; a very conspicuous, moderately broad yellow longitudinal stripe extending from the posterior face of the fore coxae, passing above the mid and hind coxae to the base of the abdomen. Halteres yellow, the base darker; knobs broken. Legs with the fore coxae purplish brown with a yellow spot on the posterior face; mid-coxae purplish brown; posterior coxae obscure yellow, only slightly darkened basally; trochanters obscure yellow; femora pale yellow with a narrow brown subterminal ring; the fore legs are broken but the femora are probably dark brown as in this group of species; tibiae and metatarsi yellow, the tips narrowly infuscated; remainder of the tarsi dark brown. Wings with a strong grayish tinge; cells *C*, *Sc* and most of *R*₁ china-white; stigma oval, brownish gray; veins pale brown, the costa china-white. Venation: *Sc*₁ ending far before the origin of *Rs*, this distance being greater than the length of *Rs*; *Rs* short, strongly arcuated at origin; cell 1st *M*₂ open by the atrophy of the outer deflection of *M*₃; basal deflection of *Cu*₁ at the fork of *M*. Abdomen dark brown, the tergites narrowly margined posteriorly with obscure yellow, broader on the posterior segments; sternites more uniformly brown. Male hypopygium (Plate IV, Fig. 1) with the pleurites rather short and stout, shorter than the longest pleural appendage; pleural appendages four in number; the longest or ventral appendage is a slender, slightly curved, chitinized arm that tapers gradually to the rather blunt apex, near the base on the inner face with a prominent, acute spine that is about two-fifths as long as the apical point; the second appendage is an apical, elongate needle-like rod directed proximad, tapering to the acute blackened point; third appendage elongate-triangular, the apex a slightly curved black spine; the fourth or dorsal appendage is a pale fleshy lobe, roughly triangular in form, the apex produced into a cylindrical arm, this arm and the proximal face of the appendage set with about seventeen mostly powerful bristles. The penis-guard is a small, feebly chitinized structure that is subtended by the much longer gonapophyses, these appearing as two delicate setigerous cushions.

Habitat.—Peru, Argentina.

Holotype, ♂, Iquitos, Peru, May 18, 1920 (H. S. Parish).

Allotopotype, ♀, May 11, 1920.

Paratype, ♂, Famailá, Tucuman, Argentina, October 12, 1920 (V. Weiser).

Gonomyia (Leiponeura) falcifer sp. n. Plate IV, fig. 2.

Belongs to the *cinerea* group; male hypopygium with three pleural appendages, the ventral appendage elongate, falcate, on its proximal face near the base with two erect spines; dorsal appendage a small, pale, setigerous lobe; penis-guard and gonapophyses without conspicuous chitinized parts.

Male.—Length about 3.5 mm.; wing 3.8 mm.

Generally similar to *G. (L.) acuminata* sp. n., differing as follows: Posterior lateral margins of the mesonotal scutum more distinctly yellowish. Fore legs present in the type; femora dark brown with only the bases narrowly paler. Wings with *Rs* a little straighter. Male hypopygium (Plate IV, Fig. 2) conspicuously different from any described species. The pleurites are a little longer than in *acuminata*; pleural appendages only three in number; the longest or ventral of these is broad basally and here produced on the proximal face into two short, subacute spines that are directed caudad, one of these blackened and with the margin weakly serrulate, the other spine a little longer, pale, only the acute tip a little darkened; the outer or lateral face of this appendage runs caudad into a long, moderately slender curved point that is approximately as long as the pleurite itself, the tip obtusely and indistinctly recurved, the inner margin weakly serrulate; the intermediate pleural appendage is a small, flattened blade, pale at the base, the tip produced into two conspicuous blackened spines; the third or dorsal appendage is a small, roughly subglobular lobe, pale, provided with about ten conspicuous setae. Penis-guard and gonapophyses pale with few evident chitinized parts; the gonapophyses appear as two pale cushions that are microscopically setigerous.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 13, 1920 (H. S. Parish).

Gonomyia (Leiponeura) machaeria sp. n.

Closely related to *G. helophila* Alexander; male hypopygium with the ventral pleural appendage sword-like, the basal half dilated; dorsal appendage entirely fleshy with a small, oval, glabrous lobe at its base; no intermediate appendage.

Male.—Length about 3.2 mm.; wing 3 mm.

Rostrum and palpi dark brown. Antennal scape orange; flagellum broken. Head brown, paler behind. Pronotum light yellow. Mesonotal praescutum gray with four narrow, brown, longitudinal stripes, the intermediate pair longer and almost confluent; scutal lobes brown; scutellum and postnotum light gray pruinose. Pleura dark brown, with a broad white longitudinal stripe, beginning immediately behind the fore coxae, passing ventrad of the halteres to the base of the abdomen; dorsad of this conspicuous white stripe is a very narrow and less distinct silvery-gray stripe that branches

out ventrad of the wing-root, passing dorsad of the halteres; the dark brown line that separates these two pale stripes is about as wide as the narrow dorsal stripe. Halteres light brown, the knobs broken. Legs with the coxae and trochanters yellow; fore femora dark brown; other femora brownish yellow, with a narrow apical or subapical darker brown ring; tibiae and tarsi dark brown. Wings with a faint grayish tinge; stigma indistinctly brownish; veins pale brown, the costal margin whitish; veins comprising the cord darker brown. Venation: *Sc* short, *Sc*₁ ending a short distance before the origin of *Rs*, the distance being about equal to *r-m* or a little less; *Sc*₂ a short distance from the tip of *Sc*₁; *Rs* short, subangulate at origin; cell 1st *M*₂ open by the atrophy of the outer deflection of *M*₂; basal deflection of *Cu*₁ immediately before the fork of *M*. Abdominal tergites dark brown, the sternites more obscure brown. Male hypopygium with the ventral appendage somewhat sword-like in appearance, heavily chitinized, before midlength dilated into a flattened wing; apex of this appendage subcylindrical, the tip suddenly narrowed; dorsal pleural appendage entirely fleshy as in *G. helophila*, at the base with a small, oval, glabrous lobe; the enlarged apex of the appendage with numerous setae; no intermediate pleural appendage as in *G. helophila*.

Habitat.—Peru.

Holotype, ♂, Iquitos, March 5, 1920 (H. S. Parish).

Gonomyia (Leiponeura) phoroctenia sp. n. Plate IV, fig. 7.

Rostrum reddish orange; antennae dark brownish black; mesonotum brown, the scutum with the anterior median area yellow; scutellum broadly margined caudally with yellowish; pleura dark, blue-gray pruinose, the dorso-pleural membrane and a broad, longitudinal stripe yellowish; halteres with the knobs yellow; wings strongly tinged with brown; male hypopygium with a single pleural appendage; penis-guard and gonapophyses complex and asymmetrical; region of the ninth tergite with two combs of small spines.

Male.—Length about 4 mm.; wing 3.8 mm.

Rostrum reddish orange; palpi dark brown. Antennae dark brownish black, the second scapal segment enlarged, suboval; flagellum with very long verticils in the male. Head dark, the vertex behind yellowish pollinose. Pronotal scutellum light sulphur yellow. Mesonotal praescutum brown, the lateral margins caudad of the level of the pseudosutural foveae more bluish; scutum dark with a brownish bloom, the anterior median area dull yellow; scutellum broadly dull yellow behind; postnotum light gray pruinose. Pleura with the dorso-pleural membranes dull yellow; remainder of the pleura dark, blue-gray pruinose, with a broad but ill-defined yellowish white longitudinal stripe that extends from behind the fore coxae past the root of the halteres to the abdomen. Halteres pale, the knobs yellow. Legs with the coxae blue-gray; trochanters dusky; remainder of the legs dark brown. Wings relatively broad, with a

strong brownish tinge; cord and outer end of cell 1st M_2 seamed with slightly darker brown; stigmal region barely darkened; veins brown. Venation: Sc relatively long, Sc_1 ending immediately before the origin of Rs , Sc_2 a short distance from the tip of Sc_1 , Sc_1 alone being a little longer than the outer deflection of M_2 ; Rs slightly sinuous; R_{2+3} nearly straight; cell R_1 nearly parallel-sided. Abdominal tergites brown, the sternites a little paler. Male hypopygium (Plate IV, Fig. 7) with the pleurites long and slender, clothed with erect bristles of which two or three on the outer distal end are very long; a single pleural appendage, this roughly subcircular in outline, entirely pale, the inner face produced proximad into a large, pale, compressed bristle or fascicle of bristles; surrounding this powerful bristle are about five smaller setae. The penis-guard and gonapophyses form a powerful cylindrical mass that occupies about all of the genital chamber; the penis-guard is long and slender, sinuous, as in the *manca* group of the subgenus. Of the gonapophyses the two longest are unequal in size, both blackened apically, elongate, flattened, with one margin serrulate; at the base of these appendages is a small, powerful black tooth with numerous plush-like hairs at its base. What appears to be projections of the ninth tergite are cylindrical arms tipped with a palmate cluster of about eight powerful spines, the more lateral of these shorter, gradually lengthening proximad, the innermost being replaced by abundant long bristles.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 18, 1920 (H. S. Parish).

Gonomyia phoroctenia, together with two other species described at this time, *G. ctenophora* and *G. crepuscula*, form a group of three very closely related species with the general body coloration very similar but the details of structure of the male hypopygium strikingly different. To these there should probably be added *G. bispinosa* sp. n., although in this form there are two pleural appendages and the comb on the ninth tergite is reduced to a pad of delicate appressed setae.

Gonomyia (Leiponeura) ctenophora sp. n. Plate IV, fig. 6.

Male.—Length about 3.8 mm.; wing 3.5 mm.

Generally similar to *G. (L.) phoroctenia* sp. n., differing as follows: Size slightly smaller. Scutellum even more brownish yellow behind. Dorso-pleural membranes and pleural stripe brighter yellow. Wings a little narrower and paler. Male hypopygium (Plate IV, Fig. 6) with the pleurites long and slender, clothed with long bristles that become longer toward the apex of the sclerite on the outer face; a single pleural appendage, this roughly cylindrical in form with a conspicuous blackened spine on the outer margin near midlength; the narrowed cylindrical tip produced into a bristle or fascicle of bristles; a few additional setae are grouped on this narrowed apex. The penis-guard and gonapophyses are not as large or complicated

in structure as in *phoroctenia*, there being two elongate, blade-like structures that are blackened at their tips. The penis-guard itself is flattened, the margin produced into an acicular spine; at the base of the penis-guard is a small bottle-shaped appendage with the neck heavily blackened. On the ninth tergite are two cylindrical arms as in *phoroctenia*, these bearing a comb of six powerful curved teeth, shortest proximally, gradually lengthening toward the outside; the outer lateral angles are replaced by long yellowish hairs. In the slide mounts of *phoroctenia* these arms are directed cephalad and the teeth are on the lateral side but this condition may be due to torsion in mounting. The figures show the hypopygia as they appear on the slides.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 17, 1920 (H. S. Parish).

Paratopotype, ♂, May 15, 1920.

Gonomyia (Leiponeura) crepuscula sp. n. Plate IV, figs. 5, 5A.

Male.—Length about 3.7 mm.; wing 3.8 mm.

Generally similar to *G. (L.) phoroctenia*, sp. n., differing as follows: Sc_1 ending a short distance before the origin of R_s ; basal deflection of Cu_1 a short distance before the fork of M . Male hypopygium (Plate IV, Figs. 5, 5A) with the pleurites long and slender, clothed with bristles as in *phoroctenia*. A single pleural appendage, this appearing as a short curved chitinized horn, the tips acute. Gonapophyses and penis-guard forming a complicated mass as in *phoroctenia*, there being two elongate organs, one slightly bent at the apex and heavily blackened, the second, which is presumably the penis-guard, pale, narrowed to the acute tip. Besides these there is a blackened flattened plate surrounding the penis-guard. The general arrangement of teeth on the ninth tergite is here approximately as in *phoroctenia* and *ctenophora* but the number of teeth is greatly reduced, there being but three or four of these, the outermost being very much more powerful than any of the others, the inner angle clothed with delicate appressed hairs.

Habitat.—Peru.

Holotype, ♂, Napo River, June 15, 1920 (H. S. Parish).

Gonomyia (Leiponeura) bispinosa sp. n. Plate IV, figs. 4, 4A.

Rostrum obscure reddish orange; antennae dark brown; pleura pale yellow, heavily pruinose with snowy white, the longitudinal stripe being very broad and ill-defined; knobs of the halteres yellow; male hypopygium with the pleural appendages two in number, similar to one another in shape, cylindrical, curved, each tipped with a powerful curved spine; penis-guard relatively long and slender.

Male.—Length about 3 mm.; wing 3.3 mm.

Rostrum obscure reddish orange. Antennae with the second scapal segment enlarged, subglobular, dark brown, the lower sur-

face more reddish; flagellum dark brown. The thoracic pleura is largely pale yellow, snowy-white pollinose, this appearing as an ill-defined, very broad, longitudinal stripe. Halteres brown, the base pale, the knobs yellow. Legs with the coxae brown; trochanters more testaceous; remainder of the legs brown. Wings grayish subhyaline; veins pale brown. Venation: *Sc* rather short, ending some distance before the origin of *Rs*; *R*₂+, nearly straight, at the outer end curved suddenly cephalad; basal deflection of *Cu*₁ just before the fork of *M*. Abdomen dark brown, the sternites paler. Male hypopygium (Plate IV, Fig. 4, 4A) with the pleurites relatively short and stout; two pleural appendages borne at the extreme apices of the pleurites; these appendages are very similar to one another in general shape but the outer one is slightly larger than the inner one. They appear as pale, cylindrical, gently curved appendages, the tips suddenly narrowed into powerful blackened spines; before the blackened tips with three or four small setae. The penis-guard is relatively long and slender, tapering gradually to the apex. The two patches of spines borne by *G. phorocenia* and allies are here represented by two pads of delicate appressed setae, no spines being evident.

Habitat.—Peru.

Holotype, ♂, Iquitos, May 25, 1920 (H. S. Parish).

Gonomyia (Leiponeura) spicata sp. n. Plate IV, fig. 3.

Rostrum brownish black; antennal scape yellowish, flagellum black; thoracic pleura brown with a broad, conspicuous, yellowish white longitudinal stripe; knobs of the halteres yellow, male hypopygium with two pleural appendages, the ventral appendage being a powerful, chitinized spike with the tip prolonged into an acute point; the dorsal appendage is very small and fleshy; gonapophyses and penis-guard arranged in pairs.

Male.—Length about 3 mm.; wing 3.2–3.3 mm.

Rostrum and palpi brownish black. Antennae with the scapa-segments yellow, the flagellum black, the segments with conspicuous verticils. Head yellow, the vertex marked with dark brown. Mesonotum brown, narrowly yellowish laterally; median area of the scutum broadly yellow; scutellum broadly obscure yellow behind; postnotum obscure yellow anteriorly, passing into brown on the caudal half. Pleura brown, the dorso-pleural membranes and the posterior sclerites light yellow; a broad, conspicuous yellowish white longitudinal stripe extending from the fore coxae to the base of the abdomen, passing immediately beneath the base of the halteres. Halteres light brown, the knobs yellow. Legs with the fore coxae yellowish on the outer face; middle and hind coxae with the outer faces infuscated basally, sparsely pruinose; trochanters light brown; remainder of the legs brown. Wings with a strong brownish tinge, the costal and subcostal cells paler; veins pale brown. Venation: *Sc*₁ ending opposite the origin of *Rs*, *Sc*₂ rather close to the tip,

Sc_1 alone being about equal to m ; Rs slightly angulated at origin; basal deflection of Cu_1 immediately beyond the fork of M . Abdominal tergites light brown, more yellowish laterally; sternites paler. Male hypopygium (Plate IV, fig. 3) with the pleurites moderately stout, the outer lateral angle extended into a pale fleshy lobe; two pleural appendages, the ventral appendage a powerful chitinized spike, the base cylindrical, soon bent strongly proximad, slightly enlarged, gradually narrowed to the acute, needle-like point; in the paratype figured, there is a small, acute spine on the cephalic side opposite the bend; dorsal pleural appendage a relatively small, pale, fleshy lobe, the truncated apex provided with about a dozen setae of which one is much more powerful than the others. Gonapophyses and penis-guard arranged in pairs, there being three sets of structures; the ventral pair arise from an enlarged base, slender, the obtuse tips a little dilated and directed slightly ventrad; the middle pair which are presumably the guards of the penis are longer, the obtuse apices a little dilated; the third or dorsal pair consist of two parallel, cylindrical lobes that bear two or three bristles along the outer margin and two others at the apex of each.

Habitat.—Peru.

Holotype, ♂, Napo River, June 15, 1920 (H. S. Parish).

Paratype, ♂, Yurimaguas, April 17, 1920 (H. S. Parish).

Genus **PARATROPEZA** Schiner.

1866. *Paratropesa* Schiner, Verh. Zool.-bot. Ges. Wien, p. 932.

The only species of *Paratropesa* known from the Amazons is *P. collaris* Osten Sacken.

Paratropesa collaris Osten Sacken.

1887. *Paratropesa collaris* Osten Sacken, Berl. Ent. Zeitsch., Bd. 31, pt. 2, p. 190.

The type was collected by Bates along the Upper Amazon River, possibly at Teffé.

Genus **TEUCHOLABIS** Osten Sacken.

1859. *Teucholabis* Osten Sacken, Proc. Acad. Nat. Sci. Phila., p. 222.

Teucholabis is one of the dominant crane-fly genera in the Tropics of the New World.

Teucholabis pulchella Alexander.

1913. *Teucholabis pulchella* Alexander, Psyche, vol. 20, p. 44.

The type is from Igarapé Assú, Brazil, January 30, 1912 (H. S. Parish).

Teucholabis decora Alexander.

1920. *Teucholabis decora* Alexander, Ent. News, vol. 31, pp. 71, 72.

The type is from Igarapé Assú, Brazil, June 25, 1919 (H. S. Parish).

Teucholabis melanocephala (Fabricius)

Flores, Brazil, November 10, 1919 (H. S. Parish).

Teffé, Brazil, January 9, 1920 (H. S. Parish).

Yurimaguas, Peru, April 1-17, 1920 (H. S. Parish).

Napo River, Peru, July 10, 1920 (Native Collector).

Teucholabis mendax Alexander.

1920. *Teucholabis mendax* Alexander, Journ. N. Y. Ent. Soc., vol. 28, pp. 5, 6.

The type was from Prata, Brazil, June 30, 1919 (H. S. Parish).

Additional records are as follows:

Iquitos, Peru, March 16, 1920 (H. S. Parish).

Yurimaguas, Peru, April 9-10, 1920 (H. S. Parish).

Napo River, Peru, June 14, 1920 (H. S. Parish).

Teucholabis lugubris Alexander.

1914. *Teucholabis lugubris* Alexander, Trans. Am. Ent. Soc., vol. 40, p. 234.

This interesting species had hitherto been known only from British Guiana.

Igarapé Assú, Brazil, July 15, 1919 (H. S. Parish).

Teucholabis anthracina sp. n.

General coloration shiny coal-black; wings subhyaline with a broad brown crossband at the cord; wing-apex broadly darkened but the apical cells with pale centers; no distinct basal band.

Male.—Length 4.6 mm.; wing 5.2 mm.

Rostrum slender, nearly as long as the remainder of the head, black; palpi black. Antennae black. Head black. Pronotum and mesonotum shiny coal-black. Pleura black, sparsely gray pruinose. Halteres black. Legs black, the extreme bases of the femora very slightly paler. Wings subhyaline; a broad brown crossband at the cord; wing-tip brown, this coloration continued basad along the veins as broad seams that extend almost to the level of the outer end of cell *1st M*₂, the centers of the cells being pale; the band along the cord begins at the large oval stigma, continuing caudad but becoming narrow and indistinct at the fork of *Cu*; the centers of the cells in the wing-tip that are pale include cells *R*₃, *R*₄, *2nd M*₂, and *M*₃; there is no distinct basal band as in *T. rostrata* Enderlein, merely a faint cloud in the base of cell *Cu*; veins dark brown. Venation: *Sc* long, *Sc*₁ extending to just beyond midlength of *Rs*, *Sc*₁ alone being a little shorter than *r*; *Rs* long, arcuated; *r* on *R*₂+, about half its length beyond the fork of *Rs*; *R*₁ beyond *r* a little longer than *r*; cell *1st M*₂ long and narrow, widened distally; basal deflection of *Cu*₁ beyond the fork of *M*, the distance about equal to *r-m*. Abdomen coal-black. Male hypopygium with the pleural appendages complex, consisting of three appendages; the outermost

one is an elongate cylindrical rod that terminates in a curved chitinized hook, the inner face before the hook fringed with erect yellow hairs; the intermediate appendage is a little longer, bearing a sharp spine on the inner face beyond midlength, the surface of this appendage with scattered coarse bristles; the proximal appendage is smaller, irregularly bifid, complicated in structure.

Habitat.—Peru.

Holotype, ♂, Napo River, June 14, 1920 (H. S. Parish).

Teucholabis jocos Alexander.

1913. *Teucholabis jocos* Alexander, Ent. News, vol. 24, pp. 440, 441.

Teffé, Brazil, December 27, 1919 (H. S. Parish).

Yurimaguas, Peru, March 28, 1920 (H. S. Parish).

Napo River, Peru, June 15, 1920 (H. S. Parish).

Teucholabis omissinervis sp. n.

General coloration yellow, the anterior median area of the mesonotal praescutum slightly darkened; legs yellow, only the terminal tarsal segments darkened; wings yellow, unmarked; cell 1st M_2 open by the atrophy of the outer deflection of M_3 .

Male.—Wing 4.4 mm.

Female.—Wing about 4.2 mm.

Head lacking. Pronotum yellow. Mesonotum clear reddish yellow, the anterior median area of the praescutum in some specimens a little darkened. Pleura whitish yellow, a little darker dorsally to produce an indistinct longitudinal stripe. Halteres pale, the knobs a little darker. Legs yellow, the terminal tarsal segments infuscated. Wings with a yellowish tinge, more saturated in the costal region; stigma rather indistinct, yellowish; veins yellow. Membrane with the microtrichiae larger than usual in the genus. Venation: Sc of moderate length, Sc_1 ending just before midlength of R_s ; R_s long, gently arcuated; r on R_2+3 less than its length beyond the fork of R_s ; cell 1st M_2 open by the atrophy of the outer deflection of M_3 ; petiole of cell 2nd M_2 about equal to the cell; basal deflection of Cu_1 at or a short distance beyond the fork of M . Abdomen brownish yellow. Male hypopygium with the pleural appendages moderately complicated, a long, digitiform hairy lobe and two chitinized blades, the outer of which is acicular, the inner one flattened, shaped somewhat like a pruning knife, the apex blackened.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 7, 1920 (H. S. Parish).

Allotopotype, ♀, April 7, 1920.

Paratopotypes, 3 ♀'s, April 7–10, 1920.

Teucholabis omissinervis is readily told from all described species of the genus by the open cell 1st M_2 .

Teucholabis parishi Alexander.

1913. *Teucholabis parishi* Alexander, Psyche, vol. 20, pp. 46, 47.

The unique type of this species was taken at Igarapé Assú, Brazil, January 30, 1912 (H. S. Parish).

Teucholabis persimilis Alexander.

1920. *Teucholabis persimilis* Alexander, Journ. N. Y. Ent. Soc., vol. 28, pp. 6, 7.

The unique type of *T. persimilis* was taken at Igarapé Assú, Brazil, July 15, 1919 (H. S. Parish).

Genus **TRENTEPOHLIA** Bigot.

Trentepohlia is well represented in tropical America, almost all the species belonging to the subgenus *Paramongoma* Brunetti.

Trentepohlia (Paramongoma) extensa (Alexander)

1913. *Mongoma extensa* Alexander, Proc. U. S. Nat. Mus., vol. 44, pp. 501, 502.

Obidos, Brazil, August 27–September 20, 1919 (H. S. Parish).

Parintins, Brazil, October 10, 1919 (H. S. Parish).

Itacoatiára, Brazil, October 17, 1919 (H. S. Parish).

Specimens of this species and *T. longifusa* were sent to Mr. Edwards for comparison with Williston's types. He points out the following differences between the present species and *Trentepohlia manca* (Williston).

"*T. manca* (Williston). Thorax bright ochreous, almost orange. Legs light brown. Wings with a suggestion of clouding along the veins towards the apex and on the crossveins. R_2 longer and more oblique, cell R_2 distinctly stalked; branches of Cu diverging at an angle of about 150° ; 2nd A longer, ending distinctly beyond the anal angle; cell 2nd A broader.

"*T. extensa* (Alexander). Thorax dull brown. Legs darker brown. Wings clear except for stigma. R_2 shorter; cell R_2 sessile; angle of Cu at most 120° ; 2nd A shorter, ending at the barely perceptible anal angle.

"I should consider the two species distinct. Williston had three ♂, one ♀."—F. W. EDWARDS.

Trentepohlia (Paramongoma) longifusa (Alexander)

1913. *Mongoma longifusa* Alexander, Proc. U. S. Nat. Mus., vol. 44, p. 502.

The type locality is Igarapé Assú, Brazil, January 19, 1912 (H. S. Parish). One other specimen was taken at Prata, June 30, 1919 (H. S. Parish). This latter specimen was sent to Mr. F. W. Edwards, of the British Museum, who very kindly compared it with the type of *T. pallida* (Williston). Mr. Edwards writes as follows:

"*T. longifusa* differs from *T. pallida* Will. as you have indicated, and also in the much darker legs and wing veins. It is also rather

smaller, but no other differences are obvious. Nevertheless, I should say quite distinct."—F. W. EDWARDS.

Trentepohlia (Paramongoma) geniculata (Alexander)

1914. *Mongoma geniculata* Alexander, Trans. Am. Ent. Soc., vol. 40, p. 247.

One female from Prató, Brazil, July 4, 1919 (H. S. Parish). The species had been known only from British Guiana.

Trentepohlia (Paramongoma) pallipes (Alexander)

1914. *Mongoma pallipes* Alexander, Trans. Am. Ent. Soc., vol. 40, pp. 247, 248.

Teffé, Brazil, December 16, 1919 (H. S. Parish). Like the last, *T. pallipes* had previously been known only from British Guiana.

Trentepohlia (Paramongoma) fuscipes sp. n.

Wings with the costal and apical cells strongly infumed; legs entirely dark brown; abdominal tergites dark brown, the sternites paler.

Male.—Length 7.8 mm.; wing 7.7 mm.

Rostrum and palpi yellowish. Antennae with the scapal segments brownish yellow; flagellum dark brown. Front pale brown, whitish pruinose; vertex dark brown. Mesonotal praescutum reddish brown, with two indistinct narrow brown lines; scutum obscure yellow, the lobes dark brown; scutellum and postnotum dark brown. Pleura brownish yellow. Halteres pale brown, the knobs darker. Legs with the coxae and trochanters yellowish testaceous; remainder of the legs uniformly dark brown, the tarsi insensibly paler. Wings subhyaline; stigma small, subcircular, dark brown; cells *C* and *Sc* brown; cells *2nd R*₁, *R*₂, *R*₃ and the outer two-thirds of *R*₅ strongly infumed; a broad brown seam along *R*₅; basal half of cell *M* brownish, this color continued distad along vein *Cu*; cord and outer end of cell *1st M*₂ narrowly and indistinctly seamed with brown; veins dark brown. Venation: almost exactly as in *T. pallipes* (Alexander). Abdomen with the tergites dark brown; hypopygium and sternites brownish yellow.

Habitat.—Brazil.

Holotype, ♂, Teffé, December 19, 1919 (H. S. Parish).

Trentepohlia fuscipes belongs to the *bromeliadicola* group of the genus despite its uniformly darkened legs. The wing-pattern and venation agree closely with *T. pallipes* (Alexander).

Trentepohlia (Paramongoma) femorata sp. n.

Wings subhyaline, the sector and vein *Cu* broadly seamed with brown; wing apex indistinctly darkened; legs dark brown, the femoral tips narrowly but distinctly brownish yellow; abdomen dark brown, segments two to four with the apical half broadly obscure yellowish.

Female.—Length 12.5 mm.; wing 9 mm.

Rostrum and palpi brown. Antennae dark brown, the basal scapal segment sparsely pruinose. Head pale brownish yellow. Mesonotal praescutum reddish brown, with three rather ill-defined darker brown stripes, confluent behind; scutum and scutellum dark brown, the latter narrowly margined with pale; postnotum dark brown, sparsely gray pruinose. Pleura reddish brown, the mesepisternum darker brown. Halteres brown, the base of the stem more yellowish. Legs with the coxae yellowish testaceous; trochanters brownish yellow, the posterior pair darker, the margins of the trochanters narrowly chitinized; femora dark brown, only the apices narrowly (0.7 mm.) brownish yellow; remainder of the legs dark brown. Wings subhyaline; stigma subcircular, dark brown; cell *C* yellowish; *Sc* yellow basally, thence passing into dark brown; broad brown seams along *Rs*, *Cu*, the cord and outer end of cell 1st *M*₂; a very faint brown tinge over the wing-apex, continued basad in cell *R*₃; veins dark brown. Venation: *Sc*₁ longer than *r*; *Rs* slightly angulated before midlength; *r* connecting with *R*₂+₃ and *R*₁, the tip of the latter a little greater than that section of *R*₂+₃ beyond *r*; cell 1st *M*₂ pentagonal, moderately long; vein *M*₃ beyond cell 1st *M*₂ much longer than this cell; basal deflection of *Cu*₁ just before the fork of *M*; distance on wing-margin between veins *Cu*₂ and 1st *A* a little more than one-half *m*. Abdomen dark brown, the apical half of segments two to four broadly obscure reddish; ovipositor pale at the base; tergal valves rather short, deep wine-brown in color, slightly upcurved, the tips acute.

Habitat.—Brazil.

Holotype, ♀, Teffé, December 24, 1919 (H. S. Parish).

Trentepohlia femorata is readily told from all described American species of the genus by the coloration of the legs.

***Trentepohlia (Paramongoma) flavella* sp. n.**

Sex?—Wing 3.4 mm.

Related to *T. (P.) pallida* (Williston) but readily distinguished by the following characters: Size very small, by far the smallest American species of the genus as yet made known. Legs pale throughout. Wings with a very strong grayish yellow tinge, the costal region brighter yellow; veins conspicuous yellow; stigma indistinct, only slightly darker than the surrounding membrane; macrotrichiae on the veins very sparse—a series on costa for its entire length; a few on the end of *R*₁, others on *M*₁+₂ and others scattered on various veins. Venation: *Sc* long, ending just before the fork of *Rs*; *Sc*₂ rather indistinct, slightly removed from the tip of *Sc*₁; *r* near the tip of *R*₁, connecting with *R*₂+₃ beyond two-thirds its length; cell 1st *M*₂ large, longer than vein *M*₃ beyond it; *m* about one-half the outer deflection of *M*₃; basal deflection of *Cu*₁ a short distance before the fork of *M*; *Cu*₂ widely separated from 1st *A* at the wing-margin, this distance being approximately as long as *Cu*₂ alone; some of the veins are very faint and evidently in

process of atrophy, such being all the veins beyond cell 1st M_2 except R_4+s ; most of the veins distad of the cord are very weak and entirely without macrotrichiae.

Habitat.—Brazil.

Holotype, Sex?, Teffé, December 26, 1919 (H. S. Parish).

Genus **TOXORHINA** Loew.

1851. *Toxorhina* Loew, Linnaea Entomol., Bd. 5, p. 400.

Toxorhina is a very characteristic genus in the Amazonian fauna. There has been some attempt made to restrict the name *Toxorhina* Loew to the species of the genus that we call *Elephantomyia* Osten Sacken. The basis for this reference consists in a preliminary paper (Bernst. und Bernst.-fauna, 1850) by Loew in which the genus *Toxorhina* is briefly characterized and keyed and three species belonging to it are mentioned but not described. There are at least three genera to which Loew's diagnosis would apply and his genus would be unrecognizable were it not for a more detailed account with figures that appeared in 1851, as cited above. In this paper, in addition to the three amber species which are briefly discussed and figured, there appears in this paper a full description, with many figures, of the recent *T. fragilis* Loew of Porto Rico, which species Coquillett selected as type of *Toxorhina* in 1910. In the opinion of the writer, the 1850 name *Toxorhina* has no more status than the famous 1800 names of Meigen, since it must depend entirely on the 1851 paper for its accurate diagnosis and recognition. If this latter fact is admitted then there can be no valid objection against selecting any of the species included in this paper as type as was done by Coquillett. Unless further and more convincing arguments are brought forth, the writer will follow the generic concepts as advocated by Osten Sacken and other later students of the Tipulidae.

It has long been held that *Elephantomyia* and *Toxorhina* are closely allied. The former genus possesses small but distinct tibial spurs which appear to be quite lacking in the species of *Toxorhina*. For the time being, at least, the writer is referring *Toxorhina* to the Eriopterini. The discovery of the immature stages is very desirable.

Toxorhina brasiliensis (Westwood)

1835. *Limnobiorrhynchus brasiliensis* Westwood, Ann. Soc. Ent. France, Tome 4, p. 683.

Itacoatiára, Brazil, October 16–21, 1919 (H. S. Parish).

Teffé, Brazil, December 22–27, 1919 (H. S. Parish).

Toxorhina centralis (Alexander)

1913. *Toxorhina centralis* Alexander, Psyche, vol. 20, pp. 52, 53.

Igarapé Assú, Brazil (H. S. Parish).

Teffé, Brazil, January 20, 1920 (H. S. Parish).

Toxorhina meridionalis (Alexander)

1913. *Toxorhina meridionalis* Alexander, Psyche, vol. 20, pp. 51, 52.

Igarapé Assú, Brazil, January 26–February 4, 1912 (H. S. Parish).

Flores, Brazil, November 14–19, 1919 (H. S. Parish).

Toxorhina flavida (Alexander)

1913. *Toxorhina flavida* Alexander, Psyche, vol. 20, p. 51.

Igarapé Assú, Brazil, February 1–7, 1912 (H. S. Parish).

Napo River, Peru, June 15, 1920 (H. S. Parish).

Genus **CERATOCHEILUS** Wesché.

1910. *Ceratocheilus* Wesché, Journ. Linn. Soc., Zool., vol. 30, p. 358.

Ceratocheilus americanum Alexander.

1913. *Ceratocheilus americanum* Alexander, Psyche, vol. 20, pp. 49, 50.

Igarapé Assú, Brazil, January 30, 1912 (H. S. Parish).

Genus **SIGMATOMERA** Osten Sacken.

1869. *Sigmatomera* Osten Sacken, Mon. Dipt. N. Amer., pt. 4, p. 137.

Sigmatomera amazonica Westwood.

1881. *Sigmatomera Amazonica* Westwood, Trans. Ent. Soc. Lond., pt. 3, pp. 366, 367.

The type of this beautiful crane-fly was taken in Amazonia by Bates. The allotype female was described by the writer (Can. Ent., vol. 52, pp. 142, 143; 1920) from material taken at Flores, Brazil, November 12, 1919 (H. S. Parish).

Genus **LECTERIA** Osten Sacken.

1887. *Lecteria* Osten Sacken, Berl. Ent. Zeitsch., Bd. 31, pt. 2, p. 206.

Lecteria armillaris (Fabricius)

1805. *Tipula armillaris* Fabricius, Syst. Antl., p. 26.

Igarapé Assú, Brazil, January 29–30, 1912 (H. S. Parish).

Manáos, Brazil, October 31–November 4, 1919 (H. S. Parish).

Flores, Brazil, November 12–19, 1919 (H. S. Parish).

Iquitos, Peru, March 17–May 4 to 21, 1920 (H. S. Parish).

Yurimaguas, Peru, April 1–22, 1920 (H. S. Parish).

Genus **BRACHYPREMNA** Osten Sacken.

1886. *Brachypremna* Osten Sacken, Berl. Ent. Zeitsch., Bd. 30, p. 161.

Brachypremna candida Alexander.

1912. *Brachypremna candida* Alexander, Journ. N. Y. Ent. Soc., vol. 20, p. 234.

Manáos, Brazil (Miss Merrill).

Teffé, Brazil, December 22–26, 1919 (H. S. Parish).

Iquitos, Peru, May 25–June 15, 1920 (H. S. Parish).

Yurimaguas, Peru, March 31, 1920 (H. S. Parish).

Napo River, Peru, June 14–15, 1920 (H. S. Parish); August 3, 1920 (Native Collector).

A few additional details concerning the leg pattern may be given: The black of the tibiae is very extensive on the fore and middle legs, only the narrow bases and slightly broader apices being yellowish white. On the posterior tibiae, however, the apical one-half or more is whitish, the dark area being a comparatively narrow ring (5 to 6 mm.) wide, ending before midlength of the sclerite.

Brachypremna breviventris (Wiedemann)

1821. *Tipula breviventris* Wiedemann, Dipt. Exot., Bd. 1, p. 43.

Igarapé Assú, Brazil (H. S. Parish).

Teffé, Brazil, December 25, 1919 (H. S. Parish).

Yurimaguas, Peru, April 5–6, 1920 (H. S. Parish).

Brachypremna williamsoni Alexander.

1912. *Brachypremna williamsoni* Alexander, Journ. N. Y. Ent. Soc., vol. 20, pp. 231, 232.

Pratá, Brazil, July 2, 1919 (H. S. Parish).

Parintins, Brazil, October 2, 1919 (H. S. Parish).

Manáos, Brazil (Miss Merrill); paratype.

Flores, Brazil, November 6–12, 1919 (H. S. Parish).

Teffé, Brazil, December 12, 1919 (H. S. Parish).

Santo Antonio, Brazil, February 16, 1920 (H. S. Parish).

Iquitos, Peru, May 25, 1920 (H. S. Parish).

Brachypremna dispellens (Walker)

1860. *Tipula dispellens* Walker, Trans. Ent. Soc. Lond., n. ser., vol. 5, p. 334.

Igarapé Assú, Brazil, 1912 (H. S. Parish).

Pratá, Brazil, July 9, 1919 (H. S. Parish).

Brachypremna uniformis Alexander.

1920. *Brachypremna uniformis* Alexander, Ent. News, vol. 31, p. 75.

Parintins, Brazil, October 8, 1919 (H. S. Parish).

Manáos, Brazil, November 1, 1919 (H. S. Parish).

Flores, Brazil, November 15, 1919 (H. S. Parish).

Iquitos, Peru, May 17, 1920 (H. S. Parish).

Brachypremna basilica sp. n.

Similar to *B. candida* Alexander but very much larger (wing of male over 20 mm.); palpi yellow, the terminal segment abruptly dark brown with the extreme tip orange; tarsi light yellow, the

tibial tips concolorous, broadest on the posterior legs, wings with a brownish tinge, the stigma with a pale center.

Male.—Length 17.5–18 mm.; wing 22–24.5 mm.

Fore leg, femur, 13.6 mm.; tibia, 17.7 mm.; middle leg, femur, 16.3 mm.; tibia, 17.8 mm.; hind leg, femur, 16.4 mm., tibia, 18.6 mm. Frontal prolongation of the head light yellow above, including the nasus; dark brown laterally; mouthparts dark brown, palpi with the three basal segments light yellow, the terminal segment abruptly dark brown with the extreme tip dull orange. Antennae short, the scape yellow; flagellar segments bicolorous, the base of each segment dark brown, the apex broadly yellow; terminal flagellar segments more unicolorous. Head brown, more yellowish anteriorly. Mesonotal praescutum brown with four very indistinct darker brown stripes, the intermediate pair very indistinctly separated from one another; an obscure yellow lateral spot on the sides of the sclerite before the suture; scutal lobes dark brown, the median area paler; scutellum and postnotum dark brown. Pleura light brown, spotted with darker brown. Halteres brown, the knobs darker. Legs with the coxae yellowish testaceous, the outer face variegated with darker; trochanters yellow; femora dark brown, the bases paler, the tips rather broadly (1.3 mm.) whitish yellow; tibiae dark brown, the bases whitish yellow, co-extensive with the pale femoral tips, the tips fading into dull yellow, narrowest (3.5 mm.) on the fore legs, broadest (9 mm.) on the hind legs; tarsi dull yellow. Wings with a strong brownish tinge, most intense in cells *C* and *Sc*; stigma ocelliform, dark brown, the center pale, occupying the end of cell 1st *R*₁; veins conspicuously seamed with brown; veins dark brown. Venation: tip of *R*₁ perpendicular to the remainder of the vein; *Sc*₁ long, extending almost to the tip of *R*₁; *Rs* strongly arcuated at origin; deflection of *R*₄+₅ distinct; petiole of cell *M*₁ shorter than *m*; vein 2nd *A* very short. Abdominal tergites brown, the bases of each segment narrowly pale; sternites obscure yellow, each sclerite with a linear black mark occupying about the distal half of each segment.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, March 31, 1920 (H. S. Parish).

Paratopotype, ♂.

Brachypremna basilica is one of the largest and most conspicuous species of the genus yet described. In the pattern of the legs, it closely parallels *B. candida* Alexander, but in other respects the two insects have little in common.

Genus **TANYPREMNA** Osten Sacken.

1886. *Tanypremna* Osten Sacken, Biol. Cent. Am., Dipt., vol. 1, p. 19.

Tanypremna longipes (Fabricius)

1805. *Tipula longipes* Fabricius, Syst. Antl., p. 25.

Manáos, Brazil (W. M. Mann).

Yurimaguas, Peru, March 29–April 20, 1920 (H. S. Parish).

Genus **MEGISTOCERA** Wiedemann.

1828. *Megistocera* Wiedemann, Aussereur. zweifl. Ins., Bd. 1, p. 55.

Megistocera longipennis (Macquart)

1838. *Tipula longipennis* Macquart, Dipt. exot., Tome 1, pt. 1 p. 57.

Obidos, Brazil, September 23, 1919 (H. S. Parish).

Yurimaguas, Peru, April 8, 1920 (H. S. Parish).

Genus **OZODICERA** Macquart.

1834. *Ozodicera* Macquart, Suites à Buffon, Tome 1, Hist. Nat. Ins., Dipt., p. 92.

Ozodicera (Dihexaclonus) triguttata sp. n.

Flagellar segments two to seven pale yellowish brown, each with two short, pale pectinations; mesonotum light brown, the praescutum with four slightly darker stripes; femora broadly tipped with brownish black; wings reddish brown with three dark brown spots, situated at the origin of *Rs* and along the cord; abdomen reddish brown, the lateral margins of the tergites darker; apices of the ninth sterno-pleurite of the male hypopygium produced into slender spatulate blades.

Male.—Length 26.5 mm.; wing 22 mm.; abdomen alone, 18.5 mm.

Frontal prolongation of the head brown; palpi dark brown. Antennae with the scape and pectinated flagellar segments pale yellowish brown, the terminal flagellar segments dark brown, flagellar pectinations pale, a very little longer than the segments that bear them. Head reddish brown; vertex between the eyes very narrow, as in the genus. Mesonotum light brown, the praescutum with four very slightly darker, indistinct stripes; median area of the scutum, scutellum and postnotum dark brown. Pleura light brown, sparsely pruinose. Halteres dark brown. Legs with the coxae pale brownish yellow; trochanters light yellow; femora brownish yellow, the tips broadly and conspicuously brownish black; tibiae brownish yellow, the tips narrowly dark brown; tarsi dark brown. Wings with a very strong reddish brown tinge, more saturated in the costal and subcostal cells; base of the wing, in the anal cells, pale, three dark brown spots arranged as follows: a small one at the origin of *Rs*; a large blotch along the cord, extending from the fork of *Rs* to the fork of *M*; the third spot is slightly smaller than the last, at the fusion of *Cu*₁ and *M*₃; stigma pale brownish yellow; veins brownish yellow. Venation as in the genus; tip of *R*₁ atrophied; tip of *R*₂ semi-atrophied, pale; fusion of *Cu*₁ and *M*₃ about equal to *r-m*. Abdomen dark reddish brown, the lateral margins of the tergites broadly darker brown, narrowly interrupted at the caudal margins of the segments; sternites brownish yellow. Male hypopygium with the sterno-pleurite produced caudad into slender spatulate blades that are subequal in length to the outer pleural appendage.

Habitat.—Brazil.

Holotype, ♂, Teffé, January 1, 1920 (H. S. Parish).

Ozodicera triguttata is distinguished from the other members of the subgenus by its large size and comparatively heavily spotted wings. It is closest to *O. (D.) fumipennis* Loew, likewise from Brazil, in which the male measures between 17 and 18 mm. in length, the antennal flagellum is almost black, the wings dark yellowish brown with only a smoky black cloud at *r-m* and with the body coloration different.

***Ozodicera (Ozodicera) noctivagans* Alexander.**

1914. *Ozodicera noctivagans* Alexander, Trans. Amer. Ent. Soc. vol. 40, pp. 253, 254.

♀, Pará, Brazil, June 7, 1919 (H. S. Parish).

♂ ♀, Flores, Brazil, November 10–19, 1919 (H. S. Parish).

The female sex has not been described and one of the present specimens is made the allotype.

Allotype, ♀, length 15 mm.; wing 11.8 mm.

Generally similar to the male, differing as follows: Flagellar pectinations a little shorter than in the male, the longest being about as long as the segments that bear them. Abdominal tergites brownish yellow with a narrow median line and narrow lateral margins dark brown. Ninth tergite dark brown. Sternites uniformly yellow. Ovipositor with the tergal valves long and slender; sternal valves shorter, compressed.

Allotype.—♀, Flores, Brazil, November 19, 1919 (H. S. Parish).

***Ozodicera (Ozodicera) extensa* sp. n.**

Antennal pectinations long, each strongly bent at about one-third its length, at the angle with a short spur that bears a bristle; mesonotal praescutum brown, the stripes very indistinct; wings strongly brownish, the costal and subcostal cells darker; a dark brown cloud at the fork of *Rs*; male hypopygium with the lobes of the tergite provided with brushes of long yellow hairs; each sterno-pleurite produced caudad into a long, slender, chitinized rod that is dilated into a spinulose apex, at the extreme tip bearing a spine.

Male.—Length 15.5 mm.; wing 13.6 mm.

Frontal prolongation of the head brown; palpi dark brown. Antennae uni-pectinate, scapal segments obscure yellow; flagellar segments brown, the pectinations dark brown; flagellar pectinations elongate, each strongly bent at about one-third the length, at the angle with a slight spur that is tipped with a small bristle. Head brown. Mesonotal praescutum brown, the stripes very indistinct; scutellum and postnotum gray pruinose. Pleura pale brown, gray

pruinose; dorso-pleural region dark brown. Halteres brown. Legs with the coxae and trochanters testaceous; femora obscure yellow, the tips broadly dark brown; tibiae similar, the tips narrowly dark brown; tarsi dark brown. Wings with a strong brownish tinge, the costal and subcostal cells dark brown; stigma oval, dark brown; a dark brown cloud at the fork of *Rs* and along the cord to the fork of *M*. Venation: *Rs* strongly arcuated at origin, a little longer than *R*₂₊₃; basal deflection of *M*₁₊₂ a little shorter than that of *M*₃₊₄; *m* about three times the deflection of *M*₂. Abdomen dark brown, the basal sternites obscure yellow; hypopygium brownish yellow. Male hypopygium with the ninth tergite having a deep, V-shaped notch, each lobe with a dense brush of long light yellow bristles. Each sterno-pleurite produced caudad into a long, chitinized blackened rod, the apex slightly dilated, spinulose, the extreme apex with a large and conspicuous conical spine; pleural appendage a simple curved arm, slightly dilated at the base, gradually narrowed to the apex.

Habitat.—Brazil.

Holotype, ♂, Teffé, January 9, 1920 (H. S. Parish).

Ozodicera (Ozodicera) attenuata Alexander.

1920. *Ozodicera attenuata* Alexander, Journ. N. Y. Ent. Soc., vol. 28, pp. 8, 9.

Pratá, Brazil, July 5, 1919 (H. S. Parish); type.

Flores, Brazil, November 15, 1919 (H. S. Parish).

Ozodicera (Ozodicera) bispinifer sp. n.

Antennal pectinations short, the longest about equal to the segments that bear them; mesonotum brown, the four narrow stripes more reddish brown; pleura buffy brown, sparsely pruinose; legs brown, the tips of the segments not distinctly darkened; wings brown, the costal and subcostal cells more yellowish; male hypopygium with the inner pleural appendage very complex, the lateral portions produced into two conspicuous parallel reddish spines; proximal portion of the appendage a slender blade that juts toward the notch of the ninth tergite.

Male.—Length 22 mm.; wing 18 mm.

Frontal prolongation of the head brown, darker laterally; nasus stout; palpi dark brown. Antennal scape obscure yellow; flagellum dark brown, the first segment paler basally; flagellar segments two to seven unipectinate, the longest branches about equal to the segments that bear them. Head brown. Mesonotal praescutum brown with four narrow reddish brown stripes, the intermediate pair narrowly separated from one another, each gradually narrowed behind, ending before the suture; remainder of the mesonotum brown, sparsely pruinose. Pleura light buff-brown, sparsely gray pruinose. Halteres dark brown, the base of the stem a little paler. Legs with the coxae concolorous with the thoracic pleura; trochanters

obscure yellow; remainder of the legs brown, the tarsi darker. Wings with a strong brownish tinge, the costal and subcostal cells more yellowish; stigma oval, brown; veins brown. Venation: R_s longer than R_{2+3} ; $r-m$ about one-half the deflection of R_{4+5} ; deflection of M_2 a little longer than $r-m$; basal deflection of M_{3+4} about one-half longer than the deflection of M_{1+2} . Abdomen light brown, the basal tergite gray pruinose, eighth segment darker brown; tergites with an indistinct sublateral stripe. Male hypopygium having the ninth tergite with a very large U-shaped median notch, the lateral lobes but feebly provided with bristles. Outer pleural appendage slender at the base, at the apex dilated into a flattened blade; inner pleural appendage complex, the lateral portion produced into two long, parallel, reddish spines, the caudal margin of the posterior spine with a single row of setigerous tubercles, each tubercle bearing a long yellow bristle, the outermost tubercle enlarged into a slender tooth; proximal portion of the appendage produced into a slender, arm-like blade that juts towards the notch of the ninth tergite.

Habitat.—Brazil.

Holotype, ♂, Teffé, February 3, 1920 (H. S. Parish).

Genus **MICROTIPULA** Alexander.

1912. *Microtipula* Alexander, Ann. Ent. Soc. Amer., vol. 5, pp. 360, 361.

Microtipula amazonica Alexander.

1912. *Microtipula amazonica* Alexander, Ann. Ent. Soc. Amer., vol. 5, pp. 361, 362.

The types were collected at Igarapé Assú, Brazil, January 27–29 1912 (H. S. Parish).

Genus **TIPULA** Linnaeus.

1758. *Tipula* Linnaeus, Syst. Nat., edit. 10, p. 585.

Tipula parishi Alexander.

1912. *Tipula parishi* Alexander, Ann. Ent. Soc. Amer., vol. 5, pp. 355, 356.

The type was taken at Igarapé Assú, Brazil, January 26, 1912 (H. S. Parish).

Tipula diacanthos sp. n.

Belongs to the *monilifera* group; antennal flagellum uniformly brownish black; general coloration shiny yellow, the abdomen with a subterminal black ring; wings yellowish gray, the costal and subcostal cells brighter; male hypopygium with the ninth tergite tridentate; eighth sternite very large, terminating in two conspicuous spines that are directed caudad and dorsad.

Male.—Length 15.5 mm.; wing 14.2 mm.; antenna 11 mm.

Frontal prolongation of the head very stout, comparatively short, yellow, the dorsal surface with erect black hairs that terminate in a tuft at the apex of the stout nasus; palpi elongate, pale brownish

yellow, the tip of the terminal segment dark brown. Antennae of the male elongate; scape and first flagellar segment obscure yellow; flagellar segments dark brown, the extreme tips of the segments a little paler; basal enlargements of the segments conspicuously globular as in the *monilifera* group. Head brownish yellow. Mesonotal praescutum shiny testaceous yellow with three indistinct reddish stripes; remainder of the mesonotum testaceous yellow. Pleura shiny yellow. Halteres yellow, the knobs a little darker. Legs with the coxae shiny yellow; trochanters yellow; femora brownish yellow, the extreme tips narrowly and indistinctly darkened; tibiae yellowish brown; tarsi dark brown. Wings with a yellowish gray suffusion; cells *C*, *Sc* and the wing-base more saturated yellow; stigma oval, pale brown; veins dark brown. Venation: *Sc*₂ extending to just before midlength of *Rs*; *Rs* very gently arcuated to nearly straight, about equal to *R*₂+₃; cell *R*₂ comparatively small, *R*₂+₃ in alignment with *R*₃; cell 1st *M*₂ elongate-pentagonal; petiole of cell *M*₁ about one-half longer than *m*; *m-cu* distinct. Abdomen obscure brownish yellow, the basal tergites and the sternites brighter; eighth sternite and bases of eighth tergite and ninth sternite black; hypopygium reddish yellow. Male hypopygium with the caudal margin of the ninth tergite tridentate, the median lobe more acute than the subequal lateral lobes; apex of the median lobe directed slightly dorsad, of the lateral lobes slightly ventrad. Ninth sternopleurite very reduced, not at all conspicuous. Eighth sternite very extensive, jutting caudad of the level of the other elements of the hypopygium, broad, the caudal lateral angles produced caudad into two very conspicuous spines that are directed caudad and dorsad; immediately cephalad of each of these lobes is a smaller conical tooth.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, March 31, 1920 (H. S. Parish).

Tipula armatipennis napoensis subsp. n.

Allied to *T. armatipennis*; head pale yellow, the vertex with a narrow brown median line; general coloration fulvous yellow; wings yellowish gray, the costal and subcostal cells more saturated; *R*₂ subperpendicular to the tip of *R*₂+₃; valves of the ovipositor subfleshy.

Female.—Length 18 mm.; wing 14.5 mm.

Frontal prolongation of the head obscure yellow; palpi elongate, especially the terminal segment, pale yellow. Antennae bicolorous; scape and first flagellar segment obscure yellow; remaining flagellar segments with the basal swelling black, the remainder of each segment brownish yellow, on the terminal segments darkening to yellowish brown. Head pale yellowish, the vertex with a narrow brown median line. Mesonotum light yellow, without darker markings of any kind. Pleura light yellow. Halteres brownish yellow, the knobs dark brown. Legs with the coxae and trochanters light

yellow; femora brownish yellow, a little darkened apically; tibiae light brown, the tips narrowly darkened; tarsi brown. Wings with a strong yellowish gray tinge, darkest in the cells beyond the cord; cells *C*, *Sc* and the wing-base more saturated yellow; stigma sub-circular, brown; veins brown. Venation: *Sc*₂ extending to about opposite two-thirds *Rs*, the latter short, almost straight, feebly angulated near one-fourth its length; *R*₂₊₃ a little shorter than *Rs*; *R*₂ short, straight, at a strong angle (65°) to *R*₂₊₃; *r* practically eliminated by atrophy; *R*₃ very long, nearly three times *R*₂₊₃; cell 1st *M*₂ rather small, pentagonal; petiole of cell *M*₁ about two-fifths cell *M*₁, nearly three times *m*; *m-cu* barely evident. An obliterative streak before the stigma, extending across the base of cell 1st *M*₂, from *R*₁ into the base of *M*₄. Abdominal tergites brownish yellow, the dorso-median area broadly, the lateral margins very narrowly, darker; sternites yellow. Ovipositor moderately elongate, very much smaller than the preceding segments; tergal valves stout, compressed, slightly narrowed before the obtusely rounded tips; sternal valves flattened, the tips obliquely truncated.

Habitat.—Peru.

Holotype, ♀, Napo River, June 15, 1920 (H. S. Parish).

Based on the structure of the female, the present insect must be considered as being a race of *armatipennis* Alexander (Chapáda, Brazil) but the discovery of the male might result in giving the form full specific rank. In typical *armatipennis* the flagellar segments are a little longer, there is no dark line on the vertex, the thoracic coloration is more fulvous and the structure of the ovipositor is slightly different.

***Tipula bezziana* sp. n.**

Frontal prolongation of the head very short, stout, nasus lacking; head yellow, the inner margins of the eyes broadly margined with black; mesonotum obscure brownish yellow, the praescutum with a broad black median stripe; wings hyaline, cells *C*, *Sc* and the stigma dark brown; wing-tip darkened; *Rs* short, strongly arcuated; cell 1st *M*₂ large, subquadrate; fusion of *Cu*₁ and *M*₃ extensive; abdomen of female elongate.

Female.—Length 15–18 mm.; wing 10.2–10.3 mm.

Frontal prolongation of the head very short, entirely without a nasus, yellow, more brownish dorsally and here provided with conspicuous black bristles; palpi brown. Antennae short, scapal segments yellowish testaceous; flagellar segments dark brown with long verticils. Head yellow, the vertex adjoining the inner margins of the eyes broadly black, restricting the ground-color to a comparatively narrow median stripe on the vertex, broadening on the occiput. Pronotum yellow. Mesonotal praescutum obscure brownish yellow with a broad dark brown median stripe, the lateral stripes indistinct; pseudosutural foveae distinct; scutal lobes brownish

black; scutellum brown; postnotum brownish yellow, the median area broadly black. Pleura testaceous yellow. Halteres yellowish brown, the knobs dark brown. Legs with the coxae concolorous with the thoracic pleura; trochanters with a faint greenish tinge; femora brown, testaceous basally, passing into dark brown at their tips; remainder of the legs dark brownish black; claws simple. Wings hyaline, the costal cell brown, the subcostal cell dark brown; stigma dark brown; wing-apex broadly darkened; veins beyond the cord broadly seamed with brown; veins brownish black; veins, with the exception of *C* and *R*, destitute of macrotrichiae. Venation: *Sc* ending opposite or slightly beyond the fork of *Rs*, *Sc*₁ indistinct, *Rs* very short, arcuated, less than *R*₂+₃; tip of *R*₂ preserved but weak; *R*₃ more than twice *R*₂+₃; *r-m* short to very short; cell 1st *M*₂ very large, roughly quadrate; petiole of cell *M*₁ shorter than *m*; fusion of *Cu*₁ with *M*₃ extensive, about equal to the petiole of cell *M*₁; 2nd *Anal* vein straight, not close to the axillary margin. Abdomen elongate in the female; basal tergites dark brown, each segment with a narrow yellowish transverse band shortly before midlength of the segment; sternites obscure yellow, terminal segments uniformly dark brownish black. Ovipositor with the valves chitinized; tergal valves straight, considerably exceeding the sternal valves.

Habitat.—Peru.

Holotype, ♀, Yurimaguas, April 10, 1920 (H. S. Parish).

Paratopotype, ♀, March 23, 1920.

Tipula bezziana is a strikingly beautiful fly that is probably not a true *Tipula* but there is no genus known to the writer that can receive it. The very short frontal prolongation of the head, without a nasus, is very like *Nephrotoma*, whereas the venation is somewhat suggestive of *Brachypremna*. The discovery of the male sex will be of exceptional interest. It is with great pleasure that this interesting species is dedicated to my friend, the distinguished Dipterologist, Dr. Mario Bezzi.

***Tipula effeta* sp. n.**

General coloration grayish brown, the pleura testaceous; antennae of the male elongated, flagellum black; wings with a brownish tinge, the costal region and the stigma darker; inner pleural appendage of the male hypopygium terminating in two stout spines.

Male.—Length 12 mm., wing 11.5 mm.

Female.—Length 12 mm.; wing 12.4 mm.

Frontal prolongation of the head short, obscure yellow, darker brown dorsally; palpi dark brown. Antennae of the male elongated, if bent backward extending to beyond midlength of the second abdominal segment; scapal segments testaceous; flagellum black, the segments elongate, covered with a delicate white pubescence

and provided with a few long bristles. Head dark brown, narrowly paler adjoining the inner margin of the eyes. Mesonotum uniformly grayish brown, the postnotum more plumbeous. Pleura testaceous. Halteres dark brown. Legs with the coxae yellowish testaceous; trochanters obscure yellow; femora brown, paler basally; tibiae and tarsi dark brown. Wings with a strong brownish tinge, especially in the cells beyond the cord; cells *C*, *Sc* and the stigma darker brown; veins dark brown: a pale area immediately before the stigma; wings petiolate. Venation: *Sc*₂ ending opposite two-thirds *Rs*; *Rs* long, arcuated near its extreme origin, slightly more than one-half longer than *R*₂₊₃; cell 1st *M*₂ elongate pentagonal; petiole of cell *M*₁ nearly twice *m*; vein 2nd *A* close to the posterior margin, cell 2nd *A* being very narrow. Abdominal tergites dark brown; sternites and hypopygium obscure brownish yellow. Male hypopygium of simple structure, the ninth tergite ending in a median conical lobe that is heavily blackened; inner pleural appendage terminating in two acute stout spines, in addition to an apical, very slender, curved spine.

Habitat.—Peru.

Holotype, ♂, Yurimaguas, April 1, 1920 (H. S. Parish).

Allotopotype, ♀, April 23, 1920.

Paratopotype, 3 ♀'s, March 29–April 13, 1920.

Tipula effeta, together with the species next described, *T. plumbeithorax*, is not a typical member of the genus *Tipula* but will probably be found to represent a new genus or subgenus when more and better preserved specimens are available.

***Tipula plumbeithorax* sp. n.**

General coloration dark plumbeous, the pleura light gray pruinose; wings faintly grayish, the stigma dark brown; 2nd *Anal* cell long and narrow.

Female.—Length 15 mm.; wing 12 mm.

Frontal prolongation of the head comparatively short, dark brown above, more yellowish laterally and beneath; nasus short and blunt, bearing several long, black bristles; palpi dark brown. Antennal scape reddish brown, the flagellar segments brownish black, verticillate, one bristle on each segment being longer than the others. Head plumbeous, light gray pruinose. Mesonotum uniformly dark plumbeous, the scutellum and postnotum light gray pruinose. Pleura with a light, blue-gray pruinosity. Halteres dark brown, the base of the stem a little paler. Legs with the fore and middle coxae gray, the posterior coxae reddish testaceous, very sparsely pruinose; trochanters brownish yellow; femora brown, paler basally; remainder of the legs brownish black. Wings with a grayish tinge; stigma conspicuous, dark brown; cell *Sc* light brown; obliterative areas before the stigma, crossing cell 1st *M*₂ into the base of cell *M*₁; veins black; wings petiolate at base. Venation: *Sc* moder-

ately long, *Sc*₂ extending to just beyond midlength of *Rs*, *Sc*₁ lacking, *Rs* long, arcuated at origin; *Rs* about one-half longer than *R*₂₊₃; cell 1st *M*₂ elongate, pentagonal; petiole of cell *M*₁ short, about one-half *m*; *m-cu* short but distinct; 2nd *Anal* vein straight, cell 2nd *A* being very long and narrow. Abdominal tergites black, sternites more testaceous brown. Ovipositor with the tergal valves rather stout, compressed, the tips broadly and obtusely rounded; sternal valves very short, flattened, the tips obliquely truncated.

Habitat.—Peru.

Holotype, ♀, Iquitos, March 10, 1920 (H. S. Parish).

Tipula plumbeithorax, like *T. effeta*, is an aberrant member of the genus *Tipula* but the material is insufficient upon which to base a new group. The general appearance of the flies suggests *Tanypremna* but the claws are simple.

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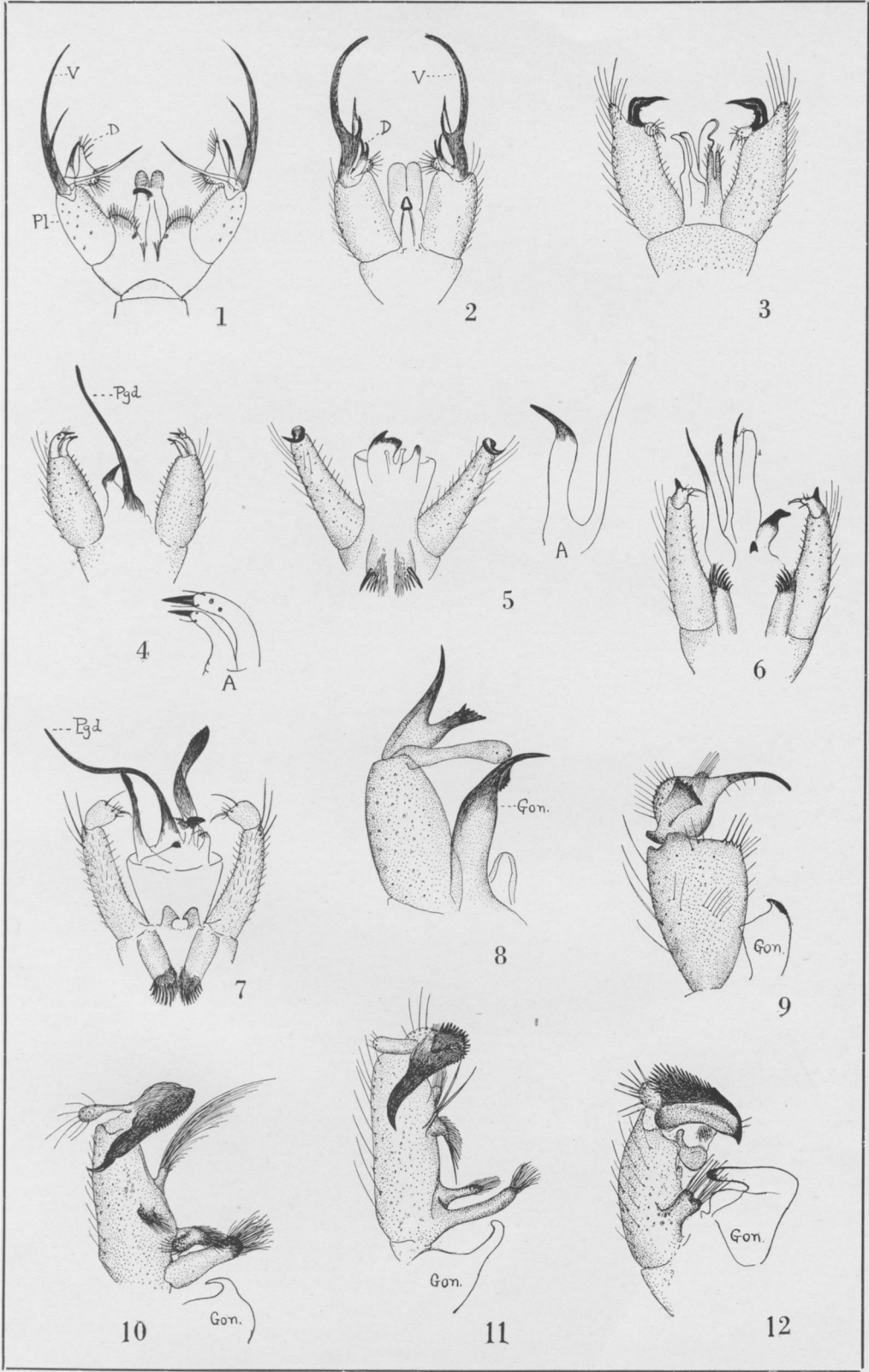
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EXPLANATION OF PLATE IV.

- Fig. 1. Male hypopygium of *Gonomyia (Leiponeura) acuminata* sp. n.
Fig. 2. Male hypopygium of *Gonomyia (Leiponeura) falcifer* sp. n.
Fig. 3. Male hypopygium of *Gonomyia (Leiponeura) spicata* sp. n.
Fig. 4. Male hypopygium of *Gonomyia (Leiponeura) bispinosa* sp. n.
Fig. 4A. Pleural appendages of the same; enlarged.
Fig. 5. Male hypopygium of *Gonomyia (Leiponeura) crepuscula* sp. n.
Fig. 5A. Penis-guard and gonapophyse of the same.
Fig. 6. Male hypopygium of *Gonomyia (Leiponeura) ctenophora* sp. n.
Fig. 7. Male hypopygium of *Gonomyia (Leiponeura) phoroctenia* sp. n.
Fig. 8. Male hypopygium of *Erioptera (Erioptera) micromyia* Alexander.
Fig. 9. Male hypopygium of *Dicranomyia acuminata* sp. n.
Fig. 10. Male hypopygium of *Dicranomyia egae* sp. n.
Fig. 11. Male hypopygium of *Dicranomyia napoensis* sp. n.
Fig. 12. Male hypopygium of *Dicranomyia rapax* sp. n.

V = Ventral pleural appendage; D = Dorsal pleural appendage; Pl = Pleurite;
Pg = Penis-guard; Gon = Gonapophyse.



ALEXANDER: NEW OR LITTLE-KNOWN CRANE-FLIES.